AARC Times
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Trudy Watson Receives AARC's Highest Honor

How RTs Can Overcome Burnout

AARC Historian Trudy Watson, BS, RRT, FAARC, is documenting the respiratory care's legacy. She will receive the Jimmy A. Young Medal at Congress 2018.

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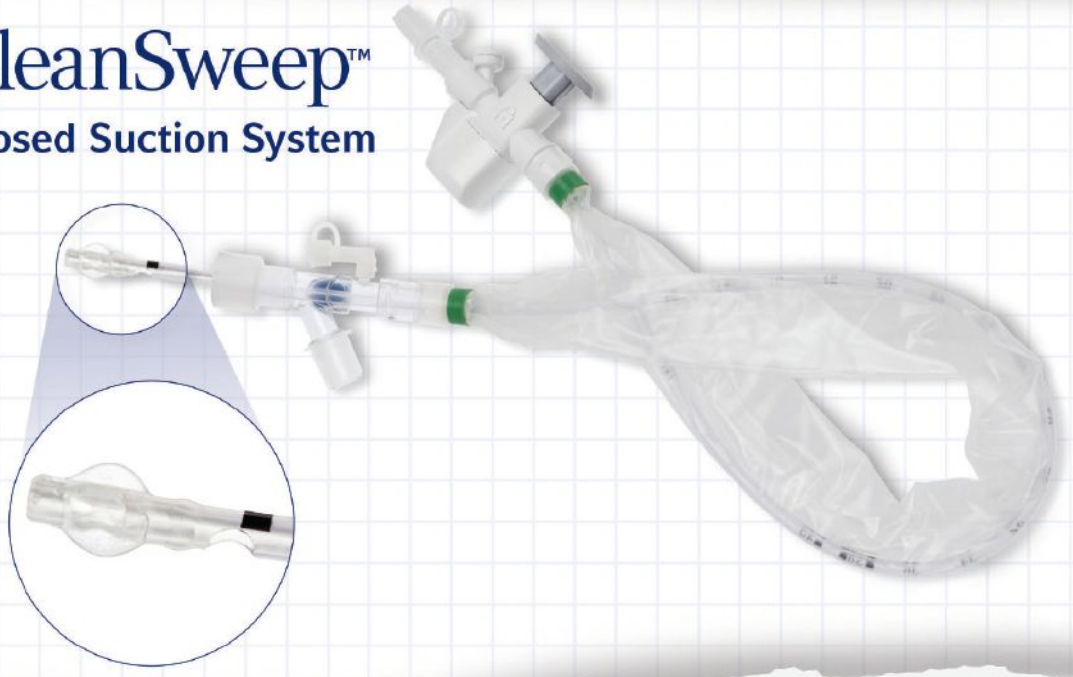

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References:

1. Data on file, 2018 Teleflex Incorporated, Report #D020608. 72 hour useful life test for CleanSweep Closed Suction Catheter
2. Scott J, Dubosky M, Vines D, et al. Evaluation of Endotracheal Tube Scraping on Airway Resistance. *Respiratory Care*. 2017.

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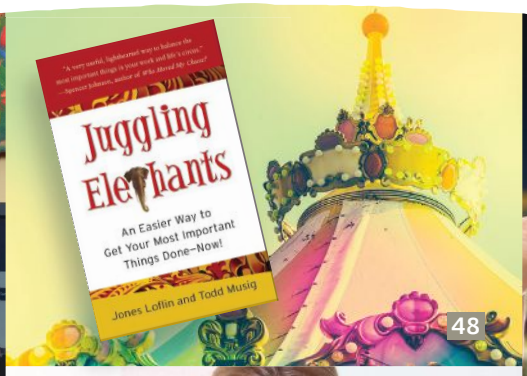

AARC Strategic Plan

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

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How Can You Be Relevant in a Relative World?

by Brian K. Walsh, PhD, RRT, RRT-NPS, RRT-ACCS, RPFT, AE-C, FAARC

Many of you have been asking this question as our profession, patient volumes, and even types of patients we see are ever changing. I wish I had a complete answer for you. One thing is for certain — change is inevitable and wonderful opportunities are around every corner. But, haven't you always heard that? Guess what? We always prevail and, for the most part, are better off because of the experience. Here are some suggestions for how we can possibly stay relevant because of previous experience and education.

Success involves help from others

We think it's important to make speedy decisions, but it's more important to make the right decisions. Good care is good care no matter the situation, economy, or who provides it. Success is never a one-man or one-woman job; it takes teamwork. There are things that we will not be able to change without the support, prayers, and encouragement of others. You have always heard me say that it takes a village to raise a good respiratory therapist. I truly believe this. The stronger our profession, the more relevant, valued, and effective we become. You have heard that a three-stranded rope is not easily snapped. Neither will our profession if we work together and support our leaders.

What disturbs you?

What causes you to think? What gets you out the bed? What upsets you about the care we provide? I'll share mine. I am disturbed that I got into the profession of respiratory therapy to help people and often I am faced with walls or barriers to that success. Individually, I have done everything I can to improve the care I provide, but that's not enough to improve the care WE provide, so I am now burdened with the desire to improve the care we provide.

The greatest use of your life is to invest it in something that will outlast it. Investing in my education and advanced credentialing will only impact a small number of people, but it's a start and a requirement. So, think carefully and do something about it. The times ahead will lead us to question every practice and leave no stone unturned. **Here's some homework.** Make a list of what disturbs you and present it to a mentor or leader. As usual, please bring a plan of how to possibly solve it.

about the author...

Brian K. Walsh, PhD, RRT, RRT-NPS, RRT-ACCS, RPFT, AE-C, FAARC, is president of the AARC.

Set stretching goals

Great goals require great sacrifice. What will it cost? What am I willing to give to the cause? Is it worth it? You may hear this described as a return on investment (ROI). Is it good care? Use your homework list to help you develop these goals. I call this the fire list. What sets you on fire when it is not completed, done properly, or correctly? Use that passion to drive change.

Don't let limitations obstruct your vision

The one thing you can count on is that change is consistent. As I end my AARC presidency in December, the profession will be on to our next challenge, but let's take what we have learned to add value to the care we provide. You may say what we have done is small or the job at hand is insurmountable, but don't let that limit your vision for our profession. I love it that we are almost continually discussing furthering our education and credentialing models and even developing challenging new ones like the Advance Practice Respiratory Therapist. This model is not only to improve patient care or access to care, but also to help retain some of our brightest people in the profession. I won't stop promoting, advancing, and advocating for our profession. But I am just one person. Together we are a powerful and unstoppable team. Yet, we need, no, we must have your vision and passion to drive it. You have mine! ■

General Counsel

Cover-Ups Are for the Beach

by Anthony L. DeWitt, JD, RRT, FAARC

John Wayne is reported to have said, "When you come slam bang up against trouble, it never looks half as bad if you face up to it." It is a sound principle. Bad things can be managed best through the truth. I often tell clients that I can defend the truth, but I cannot defend a lie. Lies hurt people, and sometimes they cause even bigger problems. A Missouri hospital recently found this out the hard way.

There is a problem in American culture. When big problems present themselves, the natural tendency of large organizations is to hide those problems. Several recent illustrations show this. Elizabeth Holmes, a woman who became a multimillionaire with her start-up Theranos, is now under indictment because she tried to hide the fact that her equipment did not work and that the lab results she publicized were done on other equipment. She is accused of running a "long con" on investors. Volkswagen used software to fool the world about emissions testing, and it got caught. The company had tried to cover it up, but failed. No respiratory therapist could forget that Glendale Adventist Hospital was alleged to have covered up Efren Saldivar's conduct in killing, with paralytics, well more than 100 patients during his tenure there in order to "reduce his workload."[1]

Cover-ups happen because accountability for wrongs that someone has done can be personally painful. Theranos' founder is likely headed to prison. Volkswagen paid huge fines. Executives were fired from both companies. So naturally, if someone can "keep the lid on" bad actions, it benefits those who have the most to lose, right? Wrong.

Take the strange case of the Boland family in its long-running lawsuit against a Chillicothe, MO, medical center. The Bolands and four other families' lost family members who died at the facility. They were told their loved ones' deaths were from "natural" causes, but according to allegations made in the petition and repeated in the Supreme Court opinion issued in 2015:

- Hospital employee Jennifer Hall was allegedly responsible for the deaths.
- Hall allegedly intentionally administered a lethal dose of succinylcholine, insulin, and/or other medication that resulted in the death of each of the decedents.
- Hall's actions are alleged to have caused at least nine suspicious deaths and 18 suspicious codes.

Hall had a somewhat troubling history, having at one time been prosecuted for arson at another hospital. She was convicted of that crime, but had the conviction set aside on appeal and then was acquitted in a later trial. Thus, although she was previously arrested, she was not convicted and has no criminal record.

Her history, however, should likely have given the hospital at least a moment of discomfort in terms of these allegations. While the plaintiffs alleged serious wrongdoing, no effort has ever been made to prosecute Hall for the alleged deaths of her patients. She has given media interviews where she denied the allegations.[2] Surely, if evidence against her supported a conviction, she would have been tried, so it is reasonable to apply a presumption of innocence to Hall.*

For whatever reason, the hospital allegedly made serious efforts *not* to learn anything about Hall's alleged misbehavior — and worse, it allegedly worked to cover

about the author...

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

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up any allegations pertaining to her. The plaintiffs in their lawsuits alleged that the facility:

Acted affirmatively to conceal the suspicious nature of the deaths by: (1) threatening and coercing its employees to conceal information concerning Hall's actions; (2) failing to request autopsies so as to conceal the causes of death when there were several suspicious deaths; (3) informing or instructing its employees to notify patients' families that the causes of death were "natural" rather than due to Hall's actions; (4) disbanding committees put into place to evaluate codes and determine preventative measures; (5) failing to inform appropriate individuals and medical committees that had authority to act about Hall's behavior so that future harm by Hall could be prevented; (6) failing to investigate and/or monitor Hall when requested to do so by law enforcement.

In spite of these allegations, the Missouri Supreme Court in 2015 overruled long-established precedent and dismissed the wrongful death claims based on the statute of limitations and at the same time appeared to reverse this holding in a companion case decided the same day. The Supreme Court did say, however, that the Boland families might have "other viable remedies at law."

The plaintiffs immediately refiled their actions against the medical center, this time for fraud. Fraud has a five-year statute of limitations in Missouri. Because more than five years had passed from the filing of the first lawsuit that had been dismissed, the circuit court dismissed the second claim as well. The families did not give up. They appealed a second time. The Western District Court of Appeals in Kansas City issued an opinion on June 23, 2018, reviving the lawsuit for fraud, finding that the damages for fraud could not be recognized until after the 2015 opinion in the Supreme Court case.

Hall has not been named personally in the lawsuit. She is not required to defend her actions in the lawsuit. But if she is called as a witness, she likely cannot help her former employer very much. The families and some of her co-workers have accused Hall as a murderer. Murder does not have a statute of limitations. Thus, even though the deaths occurred in 2002, 16 years ago, she could be charged tomorrow in those deaths. As a result, no attorney who understands how criminal law works would let Hall discuss the case in a deposition or at trial. That would be legal malpractice.

In a criminal case, a defendant cannot be placed on the witness stand and be made to invoke the Fifth Amendment in front of the jury; in a civil trial, however, no such bar exists. Depositions are routinely videotaped. Worse, Hall might be ruled an "adverse witness" and could be examined with leading questions, such as the following, and be able to give this answer:

Q: "Isn't it true you killed Mrs. X on January 4, 2002?"

A: "On the advice of counsel, I will invoke my right to remain silent as guaranteed by the Fifth Amendment to the U.S. Constitution."

A jury could be instructed that they could interpret her silence as indicating that a truthful answer to that question would incriminate her. All this bodes ill for the hospital in the lawsuit, given that the conduct alleged is horrific and the actions of the hospital would appear to be irresponsible.

The hospital should have immediately suspended any employee alleged to have acted this way, conducted an immediate investigation, and, if any evidence of criminality presented itself, terminated employment and referred the employee to the local police department. The hospital, in effect, could have helped in the investigation and worked directly with patients and their families to pay compensation if requested.

Numerous studies have shown that promptly addressing even horrible negligence works to reduce the payouts to victims. Like John Wayne said, trouble is never so bad when you face it head on. ■

**Note:* History is full of plenty of cases where wrongdoers are misidentified. The author knows of absolutely no physical evidence linking Ms. Hall to these deaths.

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1. Lieberman, P. Hospital 'Angel of Death' Gets Life Without Parole. *LA Times*, April 18, 2002.
2. Montgomery, R. Hospital deaths cast a shadow over Jennifer Hall. *Kansas City Star*, August 28, 2015.

Chronic Disease Manager

Value-Added Roles for RTs in Primary Care

by Mike Hess, BS, RRT, RPFT

Take a moment and forget everything you know about respiratory care and lung health. Imagine you're a "civilian" once again, sitting in your primary care provider's office. You've just mentioned to them that you feel like you've been getting a little short of breath lately. Actually, now that you think about it, it seems like it's been going on for a few years now. You didn't notice at first — after all, you're in your 50s. You thought you were just a little out of shape, or maybe age was catching up to you.

Your PCP asks you if you're still smoking. Sure, you say, but I'm down to about half a pack a day. That's a lot better than the pack and a half you used to go through, right? You can see the irritation in your PCP's eyes during the quick glances when they can pull their eyes away from the computer they keep tapping on. No, it's not better, they say, not really. Don't you know that those things are going to kill you? All you need to do is quit. It's all willpower, they say, even though they know you've tried to quit a dozen times. Patches, gums — even that pill that gave you the dreams. But the cigarettes pulled you back in every time. Is there something wrong with your brain? Are you weak? Now it's probably too late, you hear them say. Now you have COPD.

COPD? You mean, like emphysema? Isn't that an old person's disease? But I'm not old, you think. You're stunned. You never saw yourself as old before. You remember your uncle with emphysema, dragging his oxygen tank around, wheezing all the time. He seemed miserable, and you read a bit about it. All you remember is that it never gets better.

You suddenly realize your PCP is still talking… something about an inhaler? Was that two puffs once a day or one puff twice a day? Two puffs twice a day? Maybe all three? Are they giving you more than one inhaler? Are you going to have to use it all the time now? What about that machine your uncle had, the one that made the mist? Should you have one of those? Wait, what was that about a referral? Something called…pulmonary rehab? You have to go to rehab now?

You have so many questions, but you don't want to interrupt. You don't want to be rude, and you know your doctor's time is valuable. That's why they have to keep typing and clicking. They tell you they've sent off a few prescriptions, and now they want to talk about your cholesterol. You're still confused, worried, scared…but the next thing you know, your 15 minutes is up. You've got to get your new inhalers and set a follow-up appointment for three months or so. But, really, what are you supposed to *do*?

This, unfortunately, is how many of our patients start learning about their lung issues. A decade ago, Ming Tai-Seale, MPH, PhD, from the University of California at San Diego and her team studied how PCPs spent their time with patients.[1] They found the median visit lasted 15.7 minutes. It covered six topics, and none for more than five of those precious minutes. While this study has not been precisely replicated, Dr. Richard A. Young and associates found family physicians in Texas were only able to spend 16.5 minutes of face-to-face (as in, not buried in the electronic medical record) time with their patients.[2]

At the same time, expectations for quality are higher than ever. At the launch of the COPD National Action Plan in 2017, Dr. Byron Thomashow from the COPD Foundation stated plainly, "This disease lives in primary care." The

about the author…

Mike Hess, BS, RRT, RPFT is the president-elect of the Michigan Society for Respiratory Care.

IMPORTANT SAFETY INFORMATION

LONHALA MAGNAIR is contraindicated in patients with a hypersensitivity to glycopyrrolate or to any of the ingredients.

LONHALA MAGNAIR should not be initiated in patients with acutely deteriorating or potentially life-threatening episodes of COPD or used as rescue therapy for acute episodes of bronchospasm. Acute symptoms should be treated with an inhaled short-acting beta$_2$-agonist.

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

Immediate hypersensitivity reactions have been reported with LONHALA MAGNAIR. If signs occur, discontinue LONHALA MAGNAIR immediately and institute alternative therapy.

LONHALA MAGNAIR should be used with caution in patients with narrow-angle glaucoma and in patients with urinary retention. Prescribers and patients should be alert for signs and symptoms of acute narrow-angle glaucoma (e.g., eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema) and of urinary retention (e.g., difficulty passing urine, painful urination), especially in patients with prostatic hyperplasia or bladder-neck obstruction. Patients should be instructed to consult a physician immediately should any of these signs or symptoms develop.

The most common adverse events reported in ≥2% of patients taking LONHALA MAGNAIR, and occurring more frequently than in patients taking placebo, were dyspnea (4.9% vs 3.0%) and urinary tract infection (2.1% vs 1.4%).

LONHALA solution is for oral inhalation only and should not be injected or swallowed. LONHALA vials should only be administered with MAGNAIR.

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*Improper cleaning and maintenance may increase administration time.
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‡When the administration cycle is completed, the user will hear 2 beeps, the green LED light will turn off, and the controller will automatically shut off.
§Handset is 2.4 x 4.7 inches. Controller is 1.6 x 4.6 inches. MAGNAIR™ Nebulizer System weighs 10.2 ounces (including batteries).
COPD=chronic obstructive pulmonary disease; LAMA=long-acting muscarinic antagonist.

INDICATION

LONHALA™ MAGNAIR™ (glycopyrrolate) is an anticholinergic indicated for the long-term maintenance treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema.

Assembly required.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

References: 1. LONHALA MAGNAIR [prescribing information]. Marlborough, MA: Sunovion Pharmaceuticals Inc.; 2018. **2.** Data on file. PARI. Test report: loudness measurement eLete. November 30, 2017. **3.** LONHALA MAGNAIR [instructions for use]. Marlborough, MA: Sunovion Pharmaceuticals Inc.; 2017.

For additional information, please see the Brief Summary of Prescribing Information on the following page. Please see full Prescribing Information and Patient Information for LONHALA MAGNAIR at www.sunovionprofile.com/lonhala-magnair.

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Lonhala™ Magnair™
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Lonhala™ Magnair™

(glycopyrrolate) Inhalation Solution

For oral inhalation use

BRIEF SUMMARY OF FULL PRESCRIBING INFORMATION

Please see package insert for full Prescribing Information, including Patient Information.

INDICATIONS AND USAGE

LONHALA™ MAGNAIR™ is an anticholinergic indicated for the long-term maintenance treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema.

CONTRAINDICATIONS

LONHALA MAGNAIR is contraindicated in patients with a hypersensitivity to glycopyrrolate or any of the ingredients.

WARNINGS AND PRECAUTIONS

Deterioration of Disease and Acute Episodes

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

LONHALA MAGNAIR should not be used as rescue therapy for the treatment of acute episodes of bronchospasm. LONHALA MAGNAIR has not been studied in the relief of acute symptoms and extra doses should not be used for that purpose. Acute symptoms should be treated with an inhaled, short-acting $beta_2$-agonist.

COPD may deteriorate acutely over a period of hours or chronically over several days or longer. If LONHALA MAGNAIR no longer controls symptoms of bronchoconstriction the patient's inhaled, short-acting $beta_2$-agonist becomes less effective; or the patient needs more inhalations of a short-acting $beta_2$-agonist than usual, these may be markers of deterioration of disease. In this setting, a re-evaluation of the patient and the COPD treatment regimen should be undertaken at once. Increasing the daily dose of LONHALA MAGNAIR beyond the recommended dose is not appropriate in this situation.

Paradoxical Bronchospasm

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

Immediate Hypersensitivity Reactions

Immediate hypersensitivity reactions may occur after administration of LONHALA MAGNAIR. If signs suggesting allergic reactions occur, in particular, angioedema (including difficulties in breathing or swallowing, swelling of the tongue, lips, and face), urticaria, or skin rash, LONHALA MAGNAIR should be discontinued immediately and alternative therapy instituted.

Worsening of Narrow-Angle Glaucoma

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

Worsening of Urinary Retention

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

ADVERSE REACTIONS

Clinical Trials Experience

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

The LONHALA MAGNAIR safety database included 2379 subjects with COPD in two 12-week efficacy studies and one 48-week long-term safety study. A total of 431 subjects received treatment with LONHALA MAGNAIR 25 mcg twice-daily (BID). The safety data described below are based on the two 12-week trials and the one 48-week trial.

12-Week Trials

LONHALA MAGNAIR was studied in two 12-week placebo-controlled trials in 431 subjects with COPD, treated with LONHALA MAGNAIR at the recommended dose of 25 mcg, twice daily. The population had a mean age of 63 years (ranging from 40 to 87 years), with 56% males, 90% Caucasian, and a mean post-bronchodilator forced expiratory volume in one second (FEV_1) percent predicted of 52% of predicted normal value (20%-80%) at study entry. The study population also included subjects with pre-existing cardiovascular disease as well as subjects with continued use of stable long-acting bronchodilator (LABA) +/- inhaled corticosteroid (ICS) and ipratropium bromide background therapy. Subjects with unstable cardiac disease, narrow-angle glaucoma, or symptomatic prostatic hypertrophy or bladder outlet obstruction were excluded from these studies.

The proportion of subjects who discontinued treatment due to adverse reactions was 5% for the LONHALA MAGNAIR-treated subjects and 9% for placebo-treated subjects.

Table 1: Adverse Reactions with LONHALA MAGNAIR ≥ 2.0% Incidence and Higher than Placebo

	Placebo (N=430) N (%)	LONHALA MAGNAIR 25 mcg BID (N=431) N (%)
Dyspnea	13 (3.0)	21 (4.9)
Urinary Tract Infection	6 (1.4)	9 (2.1)

Other adverse reactions defined as events with an incidence of ≥ 1.0% but less than 2.0% with LONHALA MAGNAIR but more common than with placebo included the following: wheezing, upper respiratory tract infection, nasopharyngitis, oedema peripheral, and fatigue.

48-Week Trial

In a long-term open-label safety trial, 1086 subjects were treated for up to 48 weeks with LONHALA MAGNAIR 50 mcg twice-daily (N=620) or tiotropium (N=466). The demographic and baseline characteristics of the long-term safety trial were similar to those of the placebo-controlled efficacy studies described above. The adverse reactions reported in the long-term safety trial were consistent with those observed in the placebo-controlled studies of 12 weeks. Adverse reactions that occurred at a frequency greater than that seen in either active treatment dose in the pooled 12-week placebo controlled studies and ≥ 2.0% were: diarrhea, edema peripheral, bronchitis, nasopharyngitis, pneumonia, sinusitis, upper respiratory tract infection, urinary tract infection, back pain, headache, Chronic Obstructive Pulmonary Disease, cough, dyspnea, oropharyngeal pain, and hypertension.

DRUG INTERACTIONS

Anticholinergics

There is a potential for an additive interaction with concomitantly used anticholinergic medications. Therefore, avoid unnecessary co-administration of LONHALA MAGNAIR with other anticholinergic-containing drugs as this may lead to an increase in anticholinergic effects.

USE IN SPECIFIC POPULATIONS

Pregnancy

Risk Summary

There are no adequate and well-controlled studies in pregnant women. LONHALA MAGNAIR should only be used during pregnancy if the expected benefit to the patient outweighs the potential risk to the fetus. Women should be advised to contact their physician if they become pregnant while taking LONHALA MAGNAIR. In animal reproduction studies, there were no teratogenic effects in Wistar rats and New Zealand White rabbits at inhaled doses approximating 1521 and 580 times, respectively, the maximum recommended human daily inhalation dose (MRHDID) based on an AUC comparison.

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

Labor or Delivery

The potential effect of LONHALA MAGNAIR on labor and delivery is unknown. LONHALA MAGNAIR should be used during labor and delivery only if the potential benefit to the patient justifies the potential risk to the fetus.

Animal Data

Developmental studies in Wistar rats and New Zealand White rabbits in which glycopyrrolate was administered by inhalation during the period of organogenesis did not result in evidence of teratogenicity at exposures approximately 1521 and 580 times, respectively, the MRHDID of LONHALA MAGNAIR based on a comparison of plasma AUC levels (maternal doses up to 3.8 mg/kg/day in rats and 4.4 mg/kg/day in rabbits). Glycopyrrolate had no effects on peri-natal and post-natal development in rats following subcutaneous exposure of approximately 1137 times the MRHDID of LONHALA MAGNAIR based on an AUC comparison (at a maternal dose of up to 1.885 mg/kg/day).

Lactation

Risk Summary

There are no data on the presence of glycopyrrolate or its metabolites in human milk, the effects on the breastfed infant, or the effects on milk production. However, in a study of lactating rats, glycopyrrolate was present in the milk. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for LONHALA MAGNAIR and any potential adverse effects on the breastfed infant from LONHALA MAGNAIR or from the underlying maternal condition.

Data

Glycopyrrolate (and its metabolites) was detected in the milk of lactating rats following a single intravenous injection of 4 mg/kg of radiolabeled glycopyrrolate.

Pediatric Use

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

Geriatric Use

Based on available data, no adjustment of the dosage of LONHALA MAGNAIR in geriatric patients is warranted. LONHALA MAGNAIR can be used at the recommended dose in elderly patients 75 years of age and older.

Of the total number of subjects in clinical studies of LONHALA MAGNAIR, 41% were aged 65 and older, while 8% were aged 75 and older. No overall differences in safety or effectiveness were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

Renal Impairment

No dose adjustment is required for patients with mild and moderate renal impairment. The effects of renal impairment on the pharmacokinetics of glycopyrrolate have not been studied.

Hepatic Impairment

No dose adjustment is required for patients with hepatic impairment. The effects of hepatic impairment on the pharmacokinetics of glycopyrrolate have not been studied.

OVERDOSAGE

An overdose of glycopyrrolate may lead to anticholinergic signs and symptoms such as nausea, vomiting, dizziness, lightheadedness, blurred vision, increased intraocular pressure (causing pain, vision disturbances, or reddening of the eye), obstipation or difficulties in voiding.

In COPD patients, orally inhaled administration of LONHALA MAGNAIR at a total daily dose of 200 mcg for 28 consecutive days (maximum of 1 mg) was well tolerated.

PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Patient Information and Instructions for Use).

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most recent major revision to the *Global Strategy for Chronic Obstructive Lung Disease* calls for increasing disease management self-efficacy through education, coaching, and customized treatment plans, not to mention care coordination and referrals, or even diagnostic testing.[3] (Did you notice that in our vignette above, the provider didn't even mention spirometry? That is sadly the rule, not the exception.) How can any provider be expected to accomplish all of this in five minutes or less?

But why should RTs care about this? After all, we work in the hospital the vast majority of the time. Hospitals have their own COPD plans, with patient navigators and readmission-reduction strategies and all that. What does primary care time allotment have to do with us? Well, setting aside the point that hospital-initiated plans by their very nature miss out on things like improving early diagnosis rates and enhancing COPD management *before* an exacerbation, the answer comes down to our own resource allocations. Study after study over the past two decades has revealed that when RTs perform at the top of their licenses and use evidence-based, therapist-driven protocols, inpatient treatments and other utilization measures drop significantly. We all know that most of the albuterol we give on inpatient wards is not indicated, ineffective, and has no impact on outcomes, and the C-suite is starting to figure that out as well. More and more administrators are starting to wonder why they're paying for whole departments of people when half their number will do, and when best practices are aimed at keeping people outside the hospital anyway.

That's where the outpatient world comes in. While we have had limited success convincing the Centers for Medicare and Medicaid Services (CMS) to reimburse RTs' services directly, CMS is now moving toward the idea of "value-based reimbursement." Under this paradigm, practices are paid not for the volume of services provided, but for the *quality* of those services and the impact they have on patient care. There are several experimental models under development, but their common theme is that practices that provide excellent care in an efficient manner may receive a bonus. Practices that don't may be penalized, much like underperforming hospitals subject to the Hospital Readmission Reduction Program. This provides an opening for RTs across the country to sell providers and practice managers on our professional skills as patient educators and disease managers, with less focus on billing codes.

That's the model we use at Western Michigan University Homer Stryker M.D. School of Medicine, in Kalamazoo, Michigan. By embedding a respiratory therapist in a primary care practice, we're able to turn that five minutes with a PCP into a full half-hour. This helps ensure every patient has access to a proper spirometric diagnosis, an evaluation of their inhaler technique, and ongoing assessment of their management regimen. We use a variety of tools to ensure patients are on the right medications for their preferences and abilities, and we monitor their progress to make sure they not only retain what we teach, but integrate it into their daily routines. We coordinate their care with specialists, and we provide supportive, holistic tobacco-cessation counseling that goes beyond the basic nicotine replacement and helps patients develop healthier habits.

Since the launch of this program in 2016, we have seen significant improvements in our patients' reported quality of life, and we have been able to more closely align their care with national and international best-practice recommendations. In addition, we have been able to cement the respiratory therapist as an integral part of the outpatient team and make access to respiratory care services an expectation for both future physicians and the community. It is our hope that other health systems will follow our lead and help COPD patients all over the country breathe a little easier. ■

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Clinical Perspectives

Things That Make You Go Hmmm: Non-Evidence–Based Respiratory Care

by Thomas Lamphere, BS, RRT, RRT-ACCS, RPFT, FAARC

Since the 1980s, the economics of health care has dramatically changed, and hospitals and other health care facilities have struggled to adapt to those changes and remain solvent. Many different approaches to reducing the cost of health care delivery have been utilized over the years, including an increased focus on the use of "evidence-based" medicine. The definition of this approach to delivery of care has also undergone many changes over the years. An example of a current definition of evidence-based medicine is "a systematic approach to clinical problem solving which allows the integration of the best available research evidence with clinical expertise and patient values."[1]

Unfortunately, the delivery of respiratory care historically has not entirely been one of utilizing evidence based care. Studies published as far back as 1994 found that 25–50% of ordered respiratory therapies were "not indicated"[2] or had a "low likelihood of providing clinical benefit."[3] Ten years later, a study published in Respiratory Care indicated that not much had changed when it reviewed the appropriateness of basic respiratory care delivered at a 450-bed hospital over a three-month period. The study's authors concluded that nearly 25% of the basic respiratory care procedures delivered were not indicated, and that almost 12% of patients were not receiving care that was indicated.[4]

The use of protocols aimed at eliminating unnecessary respiratory therapy began in the early 1980s and became more popular in the 1990s. A secondary benefit of utilizing protocols is a reduction in expenses. Despite more research and publicity regarding the benefits of utilizing protocols, a 2014 American Association for Respiratory Care Human Resources Survey[5] of respiratory therapists and institutions that employ RTs found that only 53% of those surveyed indicated that they utilized at least one type of protocol, while 21% indicated they didn't utilize any protocols and 26% did not respond to the survey.

A number of standard respiratory therapy therapeutics have little or no evidence of benefit to the patient, yet these practices continue to be utilized. A few examples are the use of incentive spirometry, cool aerosol therapy, and aerosolized N-acetylcysteine (Mucomyst).

about the author...

Thomas Lamphere, BS, RRT, RRT-ACCS, RPFT, FAARC, currently serves as the executive director for the PA Society for Respiratory Care and as an instructor in the Respiratory Care Program at Gwynedd Mercy University in Sellersville, PA. He also serves as the chair of the 2018 AARC Program Committee.

Incentive spirometry

Incentive spirometry is commonly used with postoperative patients to facilitate deep breathing. The physiologic basis for this therapy is based on the fact that postoperative patients typically exhibit a very shallow breathing pattern that promotes complications such as atelectasis, secretion retention, and pneumonia. The therapeutic goal of incentive spirometry is to improve lung volume and thus prevent or reverse the complications associated with surgery and hypoventilation. However, there is no high-level evidence that shows any benefit of utilizing incentive spirometry — in fact, numerous studies show little or no benefit.

In 2011, a systematic review of studies about the benefits of incentive spirometry for surgical patients was published, which included 30 total studies (fourteen abdominal, thirteen cardiac, and three thoracic studies) with a total of 3,370 patients. The authors concluded that there was "no evidence to support the use of incentive spirometry in the management of surgical patients."[6] In addition, the AARC Clinical Practice Guideline for Incentive Spirometry (2011) states that "[i]ncentive spirometry alone is not recommended for routine use in the preoperative and postoperative setting to prevent postoperative pulmonary complications.

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1. Gailindo-Filho et al. 2015
2. AlQuaimi et al. 2017
3. Valasco et al. 2017

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Routine use of incentive spirometry to prevent atelectasis in patients after upper-abdominal surgery and after coronary artery bypass graft surgery is not recommended."[7]

In 2014, a Cochrane review of the benefits of incentive spirometry for adult patients admitted for any type of upper abdominal surgery yielded similar results. The review included twelve total studies and 1,834 total patients. The authors concluded that the results for patients receiving incentive spirometry were the same as for those receiving either no treatment, deep breathing exercises, or physiotherapy in the meta-analyses for clinical complications, respiratory failure, and pulmonary complications.[8]

Cool aerosol therapy

Cool aerosol therapy is often used for trach patients at home and in long-term care facilities over heated therapy based on insurance reimbursement. This treatment is commonly administered for patients with upper airway edema that is seen post-extubation and in patients with croup/epiglottitis or burns. The general idea is that a reduction in temperature will cause vasoconstriction in the upper airway and reduce edema. Although there is little literature regarding this subject, two small studies published in 2002 and 2006 investigated the effectiveness of this therapy in treating patients with croup.[9,10] Neither studies found evidence to support the use of cool aerosol therapy for patients with moderate croup.

N-acetylcysteine

N-acetylcysteine (Mucomyst) has been administered via aerosol as a mucolytic therapy for over 50 years. Unfortunately, while there is evidence that N-acetylcysteine can decrease mucus viscosity in vitro,[11] there is no significant evidence that the same effect occurs in vivo. The 2015 AARC Clinical Practice Guideline on the Effectiveness of Pharmacologic Airway Clearance Therapies in Hospitalized Patients specifically states: "The routine use of aerosolized N-acetylcysteine to improve airway clearance is not recommended." Additionally, the guideline cites studies showing significant side effects caused by the administration of the drug via aerosol, including bronchial irritation, chest tightness, and, less frequently, bronchospasm in asthmatic patients.[12]

Moving forward

Despite the lack of evidence that demonstrates little or no effectiveness of these therapies, they continue to be utilized. Why is this happening? There is likely no single answer to this question. One explanation is that people, in general, are slow to change the way they do things. This is especially true when a practice is taught and memorized early on and then practiced in clinical rotations over and over. The practice becomes routine, and when that happens, people tend not to question it anymore. In addition, physician, nursing, and even respiratory care textbooks continue to include these therapies to varying degrees. This would not be a problem if the authors were to include information regarding the research that questions the effectiveness of these therapies, but the failure to do so only exacerbates the problem.

Unfortunately, updating the numerous medical textbooks that include these therapies is a painfully slow process. In the meantime, respiratory therapists can be a part of the solution by educating themselves on current research behind these therapies. More importantly, therapists can have a tremendous impact on the use of these therapies at their medical facility by engaging in a conversation with physicians, nurses, and other respiratory therapists. In some cases, it may be as simple as saying "Here's the evidence I found showing that this therapy is not effective."

As we move through 2018 and beyond, respiratory therapists must continue to push for the use of evidence-based treatment for their patients. It's vitally important that they take the lead in performing high-quality research to add to the mounting evidence against the use of these therapies. Only by combining this research along with educating other health care providers and updating medical textbooks will these therapies be eliminated. ■

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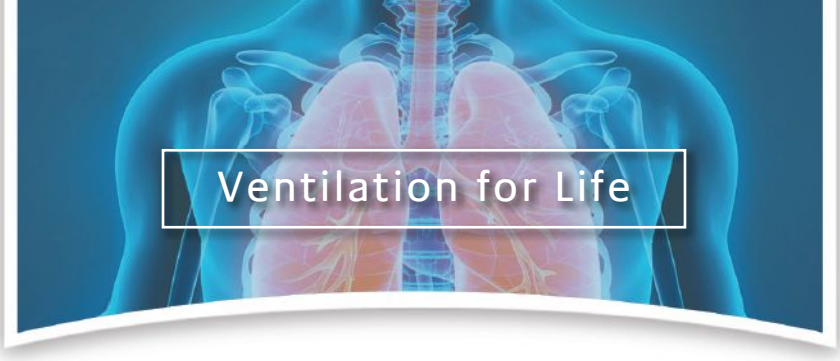

Can Extubation Failure Be Predicted?

by Ramandeep Kaur, MSc, RRT-ACCS, AE-C

Approximately 10–20% of mechanically ventilated patients fail extubation, and they are exposed to an increased risk of infection, length of ICU stay, and mortality.[1] Although there are proven methods to determine an intubated patient's ability to breathe without ventilator support, there is no established method to predict the outcome after extubation. While weaning parameters like rapid shallow breathing index (RSBI) have been utilized to determine extubation outcome, they resulted in imprecise prediction.[2]

Accurate prediction of extubation outcome is challenging due to the lack of a strict definition of extubation failure, the interchangeable use of the terms "weaning" and "extubation outcome" in published literature, and heterogeneity of the factors leading to extubation failure.[3] To precisely predict extubation outcome, future research must be directed to find solutions to these problems. Furthermore, prediction of extubation outcome should not be approached as a single event but as a continuous process to capture those patients who are at risk of developing post-extubation respiratory failure. Early identification of such patients could facilitate the application of clinical interventions that could potentially reverse the cause for failing extubation.

about the author...

Ramandeep Kaur, MSc, RRT-ACCS, AE-C, is an adjunct faculty member in the department of cardiopulmonary science and a respiratory therapist 3 in the department of respiratory care at Rush University Medical Center in Chicago, IL.

Definition of extubation failure

The basic definition of extubation failure is the need for reinstituting mechanical ventilation in patients who are recently extubated. Although this definition sounds straightforward, it becomes a complex term with the involvement of the time frame from extubation to reintubation. A wide range of time duration has been used to define extubation failure in the published literature. In one study, to establish predictors for successfully planned extubation, the authors defined extubation failure as reintubation within 48 hours.[4] In another retrospective cohort study to determine the impact of extubation failure on patient outcomes in a community hospital ICU, Seymour et al.[5] defined extubation failure as reinstitution of mechanical ventilation within 72 hours. To evaluate the impact of extubation failure on patient outcome, Thille et al.[1] defined extubation failure as the need for reintubation within 72 hours after extubation. However, in another prospective before-and-after study to assess the role of prophylactic non-invasive ventilation on reintubation, the same lead author defined extubation failure as the need for reintubation within seven days following extubation.[6] As evident from these clinical studies, the time interval used to define extubation failure varies from 48 hours to seven days. We cannot expect to predict extubation failure when there is a wide range of time duration used to define extubation failure in the available literature.

Weaning vs extubation outcome

Weaning outcome is defined as the patient's ability to breathe without mechanical ventilation. On the other hand, extubation outcome is termed as patient's ability to breathe without an artificial airway. Due to distinct pathophysiology, weaning and extubation are two different processes that pose discrete issues.[7] Some patients may successfully demonstrate the ability to breathe on their own in the form of a successful spontaneous breathing trial (SBT) but fail the extubation attempt due to airway incompetence or excessive respiratory secretions. Conversely,

some patients may fail the SBT trial but still tolerate the extubation process. RSBI is the most studied and most commonly used integrative index, and it has been shown to have superior accuracy in predicting weaning outcome. The major flaw with RSBI, however, is that it is proven to have low specificity, likely due to the presence of non-pulmonary factors like airway incompetence and excessive secretions that pose risks after the removal of the endotracheal tube.[3] In addition, RSBI measured through ventilator as compared to handheld spirometer adds variation in the measurement due to the base flow. This variation further lowers the RSBI specificity leading to excessive false positive results. Therefore, when conducting clinical studies to predict extubation outcome, it is essential to clearly demarcate weaning from extubation, and future clinical investigators should refrain from using "weaning" and "extubation outcome" interchangeably.

Causative factors of extubation failure

Patients fail extubation due to abnormal lung mechanics, impaired oxygenation and ventilation, or an inability to protect airways or neuromuscular abnormalities. Epstein and Ciubotaru[8] found that causes of extubation failure are independently associated with hospital mortality and demonstrated that patients who failed extubation due to non-airway issues like respiratory failure and congestive heart failure have a higher mortality rate compared to those who were reintubated for airway problems like upper airway obstruction, aspiration, or secretions (52.9% vs 17.4%). The authors emphasized that efforts should be favorably focused on identifying patients who are at risk of extubation failure due to non-airway issues to reduce the high mortality associated with it.[8] Furthermore, Thille and colleagues[2] provided a list of potential risk factors that are associated with extubation failure, such as age >65 years with underlying cardiorespiratory disease, pneumonia as a reason for intubation, high RSBI, etc. Clinical studies have proven that early identification of high-risk patients can improve their outcome by applying clinical interventions in a timely manner.[2] Therefore, to predict extubation failure and improve the extubation outcome, patients should be assessed separately for the readiness to extubate after passing an SBT, and the extubation phase should be given as much clinical attention as the weaning process.

Respiratory therapist's role in extubation failure prediction

Due to the complexity of the extubation process, no single clinical or physiological parameter can distinguish or predict extubation failure with certainty. Similar to protocol-driven ventilator weaning, there is a need to establish an integrative index-driven extubation protocol for the extubation process to be successful. There is a lack of widely recognized protocols or clinical monitoring strategies designed specifically for the management of high-risk patients. Because an extubation failure rate of 10–20% is considered optimal to promote aggressive early extubation and minimize ventilator days, adequate clinical attention is not paid to this area, which further hinders the research into this adverse event.[2] This explains the lack of checklists and protocols designed to identify and prevent extubation failure in high-risk patients. Respiratory therapists, being at the forefront when removing the breathing tube, play a huge role in determining extubation outcome. Therefore, RT-driven extubation protocols could offer an advantage in predicting and improving the extubation outcome through early detection of signs of post-extubation failure and timely application of noninvasive interventions like high-flow nasal cannula, noninvasive ventilation, and airway-clearance modalities.

Conclusion

Extubation is distinct from weaning, and it is not a single event but a process. Therefore, no single parameter can accurately predict the extubation outcome. Similar to weaning, extubation should be approached systematically and in a holistic manner. There is a need to develop integrative indices that could be utilized to monitor patients after extubation. Once established, these indices could guide the development of clinical protocols that can be utilized by bedside clinicians to identify high-risk patients and ultimately improve the extubation outcome. ■

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RT History Is Safe in Her Hands

We can thank this year's Jimmy A. Young Medalist for the AARC's Virtual Museum and much more

by Debbie Bunch

Every year, the Jimmy A. Young Medal is bestowed on an AARC member who has gone above and beyond for the profession. These members have made major impacts that will be felt by therapists for generations to come.

This year is no exception with one caveat. In addition to leaving a lasting legacy of her own, our 2018 medalist is ensuring that all of the winners who came before her, and all of those who will come after, will be remembered by future generations of

Trudy Watson has served the Association in numerous capacities, but her mission to create an online museum dedicated to the profession's past is considered by many to be her crowning achievement.

respiratory therapists as well. As the primary driver behind the AARC's Virtual Museum, Trudy Watson, BS, RRT, FAARC, is safeguarding the history of the respiratory care profession not just for RTs, but for everyone who wants to learn more about where the profession came from and where it is going.

A curious kid

Watson's love for her profession and the history behind it harkens back to her upbringing in Illinois. She was a curious kid who always wanted to know more about whatever it was she was doing. "I grew up in a rural area of East Moline, in a heavily wooded neighborhood," says Watson. "My neighborhood pals and I spent countless hours exploring the woods, hunting for morel mushrooms in the spring, swimming in the quarry pond during the summers, and sledding down the hills during winters."

She was an avid reader, and her weekly allowance often went toward buying books. When her older brother got a part-time job at the local library, he and his coworkers regularly suggested new titles to her, and she says she spent many an hour under the covers with a flashlight, getting in just a few more chapters after her parents had called lights out.

Her favorite subject in school was science, and she credits her parents with fostering that interest by letting her conduct all sorts of science experiments in the kitchen and garage. "The failures proved valuable in helping me develop critical thinking skills," she says now.

She enrolled in every science class available to her in high school but wasn't sure which career path to take. Her school counselor certainly wasn't any help. "I actually had a high school guidance counselor suggest there were only five basic options for females — secretary, teacher, nurse, customer service, or motherhood," says Watson. "I was 16 years old, and none of those options appealed to me at that point in my life."

She ended up talking with an aunt who was a nurse. While her aunt was disappointed to hear nursing would not be in her niece's future, she did tell her that there were many other options available in health care — including a relatively new profession that was then called "inhalation therapy."

"It seemed like a possible option since it was 'hands on,' would allow me to help others, and applied the sciences, which I loved," says Watson. Luckily, there was a school for inhalation therapy at Lutheran Hospital in Moline, and she had a friend whose father was a physician. He arranged for her to shadow a therapist, and after

Jimmy A. Young, MEd, RRT, Inspired Generations of RTs

Every year, the AARC bestows the Jimmy A. Young Medal on a member of the profession who has exceeded all expectations for meritorious service to the profession.

The award was created in 1976 to honor the memory of Jimmy A. Young, MEd, RRT, an exemplary member of the respiratory care profession and AARC leader who died suddenly at the age of 40. Among his many accomplishments were serving as director of the first "inhalation therapy" department at Massachusetts General Hospital in Boston, co-authoring one of the first textbooks on respiratory care, *Principles and Practice of Inhalation Therapy*, and serving as the 22nd president of the AARC. ■

just one afternoon she was hooked. "I finally knew what I wanted to do when I grew up," she says.

Her high school friends thought she was crazy to forego the university scholarship she had been offered so she could instead attend what they thought of as a "technical program." After enrolling in the program, which was associated with Black Hawk College, she thought they might be right — though not because it lacked the rigor her friends thought she deserved. "I discovered that in addition to the full class load at Black Hawk College, I would be assigned to clinical rotations that included working two out of every three weekends and most holidays," recalls Watson.

She didn't have to worry about losing out on scholarship money though. "One of my classmates, Dennis Harker, and I both received academic scholarships from the Black Hawk Tuberculosis and Respiratory Disease Association during our freshman year in the program, so that helped convince some of my skeptical friends that perhaps I hadn't made a complete mistake in choosing this profession," says Watson.

THE DAILY DISPATCH Published in Moline, Ill. WEDNESDAY, APRIL 14, 1971

John A. Broeker, executive director of Black Hawk Tuberculosis and Respiratory Diseases Association, yesterday presented scholarships of $500 each to Trudith Mills and Dennis Harker, both freshmen at Black Hawk College, and also freshmen in the inhalation therapy program of Lutheran Hospital. Looking on is Charles McKnight, head of the Inhalation Therapy Department of Lutheran Hospital. (Dispatch Photo)

Two Students Get Scholarships

Trudith Mills, 18, daughter of Mr. and Mrs. Byron Mills of 3607 37th Ave., Moline, and Dennis Harker, 19, son of Mr. and Mrs. George Harker of RR 3, East Moline, were presented scholarships in the amount of $500 each at ceremonies yesterday in Lutheran Hospital.

John A. Broeker, executive director of Black Hawk Tuberculosis and Respiratory Disease Association, made the presentation in the presence of Charles McKnight, who heads the Inhalation Therapy Department at Lutheran Hospital, and physicians involved in the program.

Both young people are in their first semester of work with the inhalation program, planning careers as inhalation therapists. Both young people are freshmen at Black Hawk College and each has a 4 point average.

Students from Rock Island, Warren, Whiteside, Henry, Henderson, Jo Daviess, Knox and Mercer counties are eligible for the scholarship which is based on merit and need according to Broeker.

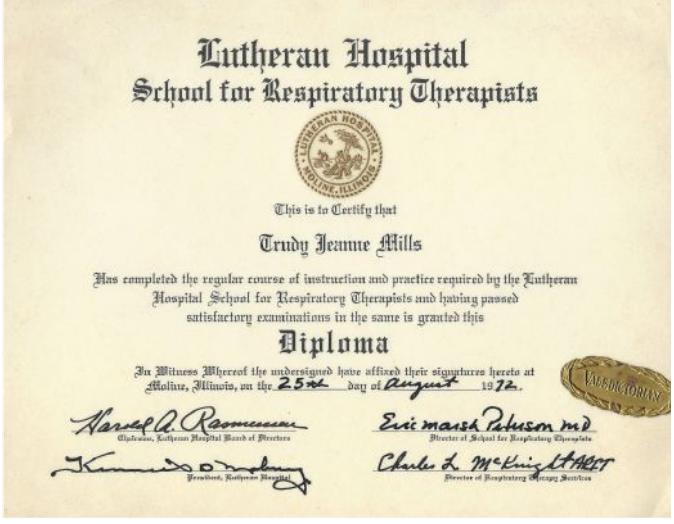
Trudy Watson, second from the right, and Dennis Harker, right, made the newspaper when they received scholarships to attend the Lutheran Hospital RT program.

Aha moments

She and her classmates learned the ins and outs of respiratory care through *Egan's Fundamentals of Inhalation Therapy* — the first edition — and by the time they graduated in 1972, the program's name had changed to the School for Respiratory Therapists. She didn't know it yet, but she was getting ready to enter a profession that was on the move in more ways than one, and she would be swept along in the current of change.

"I began my career as a clinical supervisor in the respiratory therapy department at Lutheran Hospital in Moline," says Watson. "Although I spent the majority of my time in the ICU, my director, Charles McKnight, made sure I rotated throughout the hospital to refine basic clinical skills, acquire new ones that had not been covered in our curriculum, and prepare for the registry exams. I had so many 'aha' moments during that first year when those jumbled tidbits of information I'd memorized over the previous two years truly started to make sense." By the time she was eligible to sit for the registry — back then, you had to have a year of experience first — she was ready to roll.

Watson was also called on to help out with more than just clinical care and supervision. The hospital was undergoing an expansion of its respiratory therapy facilities, and since her dad was a builder, the department enlisted her help with the project. "I



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School for Respiratory Therapists

This is to Certify that

Trudy Jeanne Mills

Has completed the regular course of instruction and practice required by the Lutheran Hospital School for Respiratory Therapists and having passed satisfactory examinations in the same is granted this

Diploma

In Witness Whereof the undersigned have affixed their signatures hereto at Moline, Illinois, on the 25th day of August 1972.

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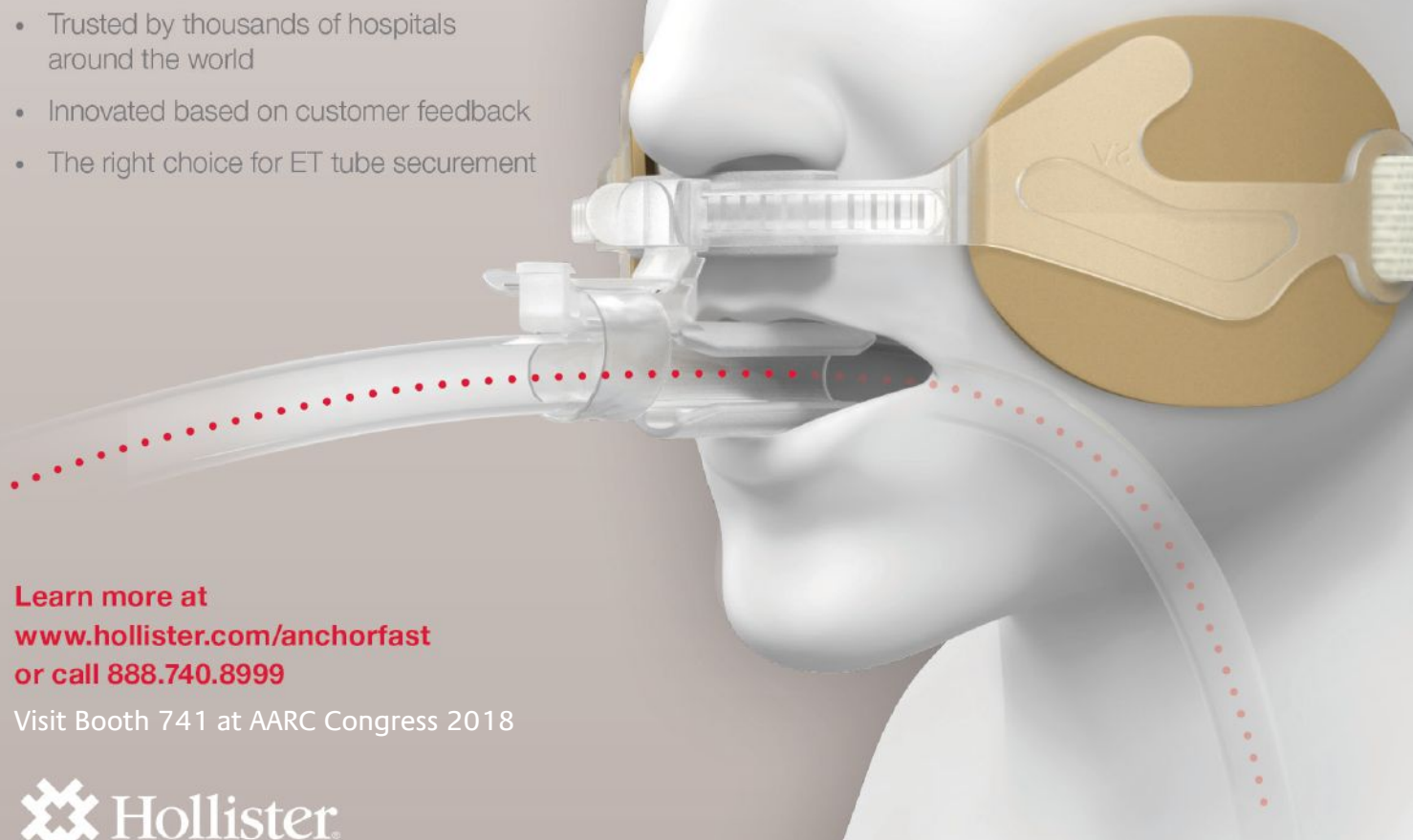

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somehow became the designated liaison with the construction firm," says Watson. "I was quite relieved when the Respiratory Care Center opened as scheduled without any glitches. The center was cutting edge for its time — it was even featured in an article co-authored by Watson and McKnight that appeared in *Respiratory Care*."

Trudy Watson, left, taught alongside Nancy Smith, center, and Barb Kimpe at Black Hawk College for nearly two decades.

A knack for education

Watson was enjoying life as a respiratory care supervisor, but before long, many of the therapists, nurses, and physicians she worked with were encouraging her to apply her expertise to RT education. She had a knack for simplifying difficult concepts and relaying vital information in the in-services she provided, and educators were sorely needed to keep up with the growing demand for therapists. When a full-time faculty position opened up at Lutheran, she took it. Her first assignment was to develop a technician-level program to complement the registry-level program already in place.

An AARC member since her own days as a student, Watson relied heavily on her contacts within the Illinois Society for Respiratory Care (ISRC) to help her put together a quality program. "The following year I was named education director for the technician and therapist programs, and again I called upon my fellow educators around the state to mentor me in this new role," she says. "This was long before current resources existed, such as the AARC Education Section, the internet, or *AARConnect*. The primary means of contact with other educators at that time was simply via long-distance phone calls."

But life didn't always go her way. In 1978 she was injured in a car accident and spent five months in the hospital. She bore the experience with grace and used it as a learning experience for her profession. "Although my view from the 'wrong side of the bedrail' was prolonged and far from pleasant, it truly taught me patience and gave me a newfound empathy for what our patients and their families endure," explains Watson.

She took a brief break to start her family in 1981, then returned to teaching on a part-time basis for a few years before going back full time. She earned her BS degree in 1998. One of the highlights of her years at Black Hawk College was being named director of the Teaching/Learning Center (T/LC). "I divided my time equally between teaching didactic courses in the respiratory care program and working with faculty in the T/LC," she says. "I developed a mentoring program for new faculty and was responsible for training faculty to use educational technology in the enhanced classrooms and distance learning systems." She also spent three weeks in 1997 in Russia with the USA–Russia Health Exchange, a group helping the two nations better understand each other's health systems.

Watson says the best thing about being an RT educator was the ability it gave her to mold the next generation of therapists. "The primary highlight for me as an RT educator has been the opportunity to work with so many wonderful students through the years and to witness their successes in the profession," says Watson.

Community outreach

Watson put her educational expertise to work in the community, too. After a health scare involving one of her sons — due to school policy, he was not allowed to carry his metered-dose inhaler with him during after-school track practice and suffered a bout of exercise-induced bronchoconstriction — she worked with the American Lung Association (ALA) of Illinois to make sure that didn't happen to another child. "After researching the policies of school districts throughout the state, I proposed a program to the ALA of Illinois to meet with school superintendents to discuss the need for students to carry their rescue inhalers and to offer a one-hour asthma education program approved for professional development credit for K–12 personnel," she says. The project was approved, and an asthma education grant allowed her to spend the next 18 months traveling around the state to deliver the education program and conduct train-the-trainer workshops.

At the same time, the ALA of Illinois staff lobbied the state legislature for a legal solution to the problem. In 2001, Illinois passed a law allowing students with parental and physician authorization to carry and self-administer their asthma medications. "Mission accomplished," says Watson. When the grant ended, she became the program director for Community Health Care, which

1. Dunne RB and Shortt S. Comparison of bronchodilator administration with vibrating mesh nebulizer and standard jet nebulizer in the emergency department. The American journal of emergency medicine. 2017

PM532

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operated medical and dental clinics for the low-income population in her community. She had administrative oversight for four clinics, including a health care for the homeless program, where she focused on improving asthma care. Watson earned the Certified Asthma Educator credential and worked with staff to provide basic asthma education, along with supplies such as peak flow meters and spacers. "Trying to locate and provide the necessary resources for those who have so little was challenging and emotionally draining and was by far the most difficult position I held during my career," says Watson. "I'd be less than honest if I didn't admit that I went home in tears many nights during the five years I held that position."

Watson enjoyed catching up with long-time colleagues Larry Williams, left, and Charlie McKnight at the 2014 event. All three are former presidents of the Illinois Society for Respiratory Care. McKnight opened the first RT department in the area in 1959 and held RRT certificate #113. He passed away in 2016.

After leaving Community Health Care, she taught respiratory care courses at Trinity College of Nursing and Health Sciences in Rock Island, IL, and worked on a contract basis for a couple of firms engaged in RT educational resources.

Always time for the AARC

Despite her busy work life, Watson always found time for her professional organizations. She began attending chapter meetings and state and regional conferences while she was still in school, and she went on to serve the ISRC in a range of capacities, culminating with her presidency in 1985. She also spent a number of years as an Illinois delegate to the AARC House of Delegates(HOD), where her passion for the profession was fueled by the synergy, networking, and camaraderie inherent in that body. She calls her years in the HOD some of her most enjoyable and says it opened the door to greater involvement in AARC leadership as well. After serving one term as a member of the AARC Board of Directors (BOD), along with two terms each as vice-president and secretary, she was elected AARC president in 1994.

Watson spent much of her year as AARC president focused on issues surrounding the sponsorship of agencies for programmatic accreditation. "It proved to be quite a divisive issue, but we strived to resolve the situation over the months that followed, eventually resulting in the dissolution of the two RT accreditation agencies and the establishment of a Transition Committee to establish a single accreditation agency," says Watson.

Sam Giordano, MBA, RRT, FAARC, was AARC executive director at the time. "It is important to note that Trudy, through her leadership as president, was instrumental in reorganizing our education accreditation system," he explains. "The result of her efforts and the efforts of others was to consolidate accreditation services between two agencies and facilitate transition to a higher entry-level education."

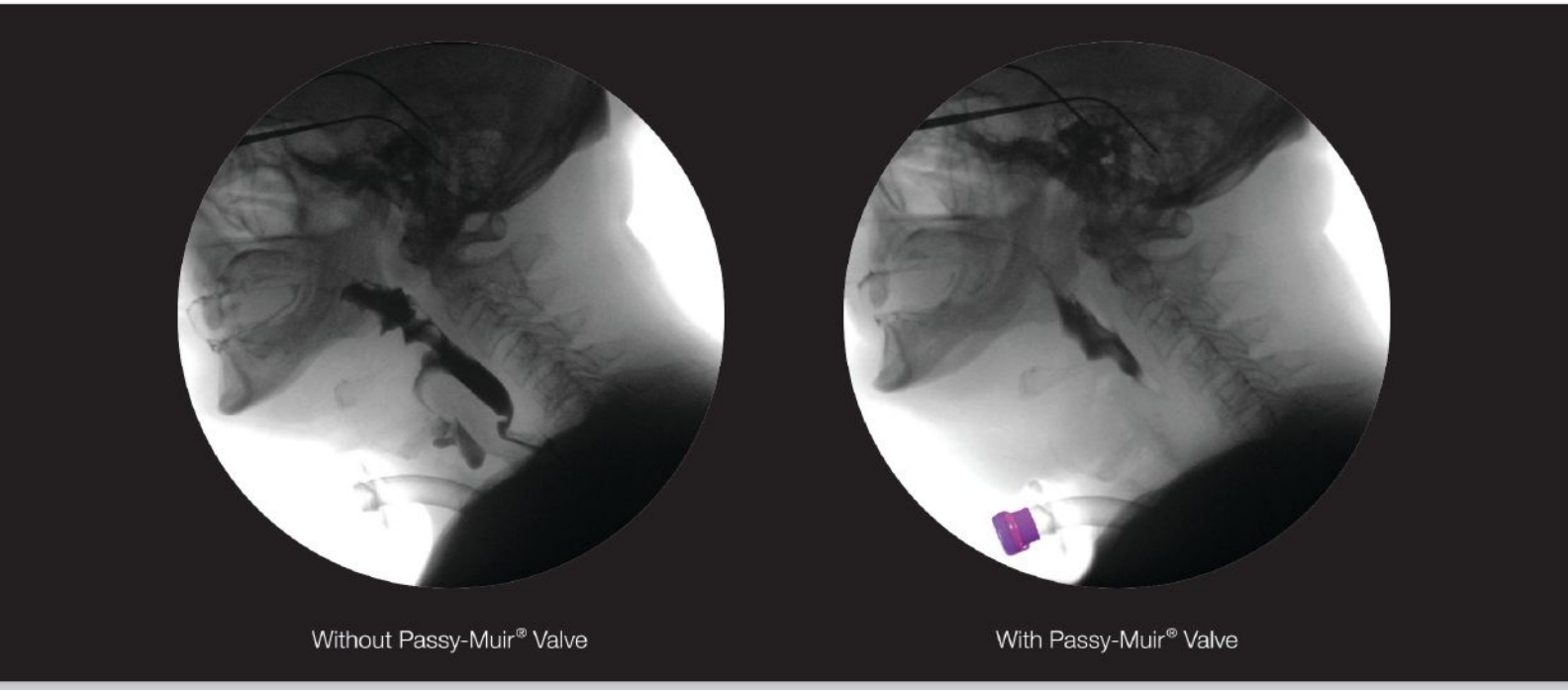
Watson's service on the national level also included chairing the Task Force on Restructuring, a two-year effort that resulted in a number of changes in the way the AARC is organized. Among the issues that were addressed were the nomination process, the expansion of the Board of Directors and modification of board member roles, and a change in the number of members required for an AARC Specialty Section to hold a seat on the Board.

Pat Munzer, DHSc, RRT, FAARC, remembers those tumultuous days well and how Watson was able to keep everyone on an even keel as the AARC House of Delegates debated the proposed changes. "The biggest issue I remember had to do with the number of members needed for a specialty section — 1,000 members — to have a seat on the Board," says Munzer. "What impressed me the most was how poised and professional she was as she stood her ground and ably advocated for the Task Force recommendations in the face of many questions."

The Virtual Museum is born

Watson also worked with the Commission on Accreditation for Respiratory Care (CoARC) and the Lambda Beta Society, and she has served in other capacities too numerous to mention. As noted at the beginning of this article, however, her mission to preserve the history of the respiratory care profession is perhaps her most significant achievement. Watson's passion for maintaining the historical record grew out of her own interest in genealogy. "I realized the value that the attachment of a photo to a person or event adds to any family tree," says Watson. "I believed the same would hold true for individuals, events, and equipment throughout respiratory care's history." With support from former AARC historian Bob Weilacher, RRT, FAARC, she proposed the idea of an online pictorial collection to chronicle the history of the profession. After some thought and investigation into the logistics that would be involved, the AARC BOD approved the concept.

Positive Closure



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The American Respiratory Care Foundation (ARCF) took ownership of the funding that would be necessary for the Virtual Museum, and Teleflex provided a $25,000 grant to get the ball rolling. The ARCF began selling "virtual bricks" to augment the financing as well, and the ARCF is still selling bricks today to those interested in keeping the history of respiratory care alive. The Virtual Museum officially launched in 2014 and is managed on an ongoing basis by Watson and a handful of volunteers — Karen Schell, DHSc, RRT, RPFT; Dianne Lewis, MS, RRT, FAARC; Gayle Carr, MS, RRT, CPFT; Colleen Schabacker, BA, RRT, FAARC; Steve DeGenaro, BA, RRT, Asha Desai, BS, CAE. Association members and friends of the profession have stepped up to contribute more than 1,100 images for the historic collection so far, with more coming in all the time. RTs aren't the only ones visiting the site either. "We've received numerous requests from textbook publishers, medical museums, filmmakers, and students seeking permission to use images from the Virtual Museum for a designated project," says Watson.

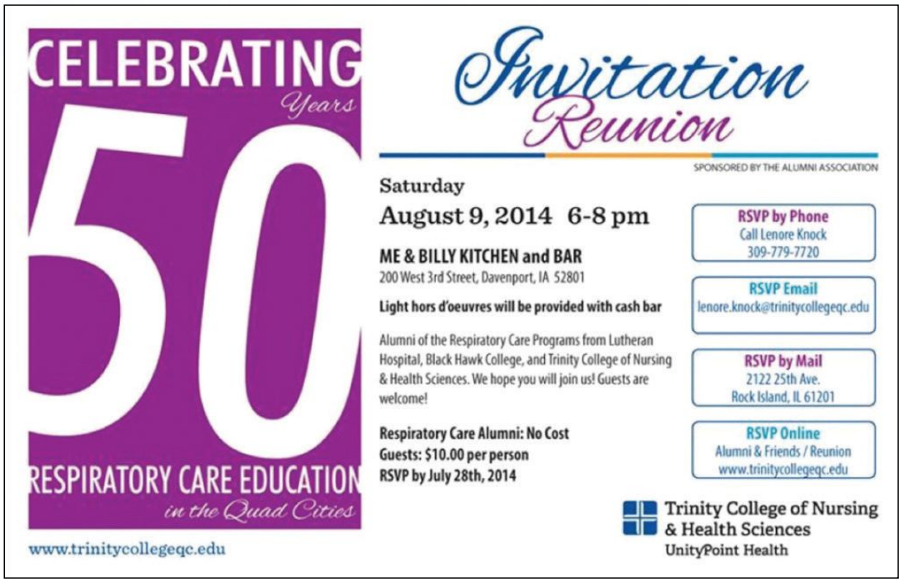
Colleen Schabacker believes the Virtual Museum is Watson's most important contribution to the profession. "The museum was her brainchild because she always felt every respiratory therapist needed to know what came before them," says Schabacker. "She would say, 'It's our history!' The museum would have never proceeded if it weren't for her dedication, tenacity, and sheer drive to make it happen." She says Watson remains vigilant about making sure everything that goes into the museum exhibits is historically accurate.

1993 AARC President Dianne Lewis agrees, noting that Watson spent untold hours going through box after box of memorabilia stored in the Executive Office, searching for photos, drawings, and anything else that had a historical meaning for the profession. "Today we have the Virtual Museum, which was Trudy's idea and will be her legacy," she says. Watson also deserves credit for coming up with the idea for the AARC Legends award, which is now bestowed every year on individuals nominated by the AARC, ARCF, NBRC, and CoARC who have made a major mark on the respiratory care profession. Watson and her committee review the nominations and select up to five new Legends each year. They are honored during the Awards Ceremony at the AARC Congress.

Enduring record

Trudy Watson says her dad always encouraged her to "leave it better than you found it," and anyone who knows of her and the work she has done on behalf of the AARC would say she's made her dad proud. Not only has she added significant value to the RT educational arena and her professional organizations, but she has established an enduring record of the respiratory care profession that will outlast us all.

What did she think when she heard she was to be this year's Jimmy A. Young Medalist? Says the long-time therapist, "Total disbelief would be an understatement. I am truly honored to be selected for this prestigious award." ■



Watson joined colleagues at this 2014 event honoring 50 years of respiratory care education in her community.

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Burnout!

How RTs cope when the stress and strain gets to be too much

by Debbie Bunch

The statistics are alarming. More than half of physicians in the U.S. suffer from burnout. Doctors have the highest rate of suicide in the country. Forty-three percent of nurses have a high degree of emotional exhaustion. Eighteen percent of nurses have depression, twice the national average.[1]

As you may suspect, far less is known about how the stress and strain of health care delivery affects respiratory therapists. But that doesn't mean RTs are immune to burnout. Indeed, as clinicians who work with acutely and chronically ill people on a daily basis, therapists are placed in the same kinds of situations as physicians and nurses and are likely to face the same kinds of risks. RTs who have been there agree.

Too many deaths

Kristi Rosey, RRT, CPFT, is one of those therapists. "I spent my first four years as a therapist at the University of Washington Medical Center, where she watched one after another cystic fibrosis patient die. "It was just too sad," says the RT. Her own children were small at the time, and the emotional distress she was experiencing at work seeped over into her home life. "I'd become a disconnected mother. I could not make a decision to save my life," she recalls. "I cried with fatigue, I cried with frustration, I cried for no reason."

While Rosey was never diagnosed, she was sure it was a form of post-traumatic stress and she knew something had to give. Her solution: switch to home care. It helped. "I thought I would hate it but ended up loving it," says the AARC member. She eventually went back to hospital care and her emotional well being suffered again. Thanks to a supportive husband, she was able to take four years off to stay home with her two youngest kids, and that's when she discovered meditation.

"It was the meditation that finally healed me," says Rosey, who now works at Olympic Medical Center in Port Angeles, WA. "It took discipline meditating twice a day, every day, but it was so worth it."

Janet Cothrell, RRT, RPFT, has experienced bouts of burnout related to the emotional stress of caring for sick patients too. "I remember one day when too many of our 'frequent

Therapists talk about their experiences with burnout and the steps they've taken to overcome it.

flyers' — return patients who had suffered long-term effects from bone marrow transplant — were dying," she recalls. She took what she called a "mental health day" and her supervisor, who came to the position from a lab where she rarely saw patients, was alarmed.

"She insisted that I see social work or chaplaincy," says the AARC member, who works at Seattle Cancer Care Alliance in Seattle, WA. Cothrell ended up visiting with a chaplain, but by then her symptoms had moderated. Still, as time moved on, she found herself cycling in and out of burnout and eventually decided to make the change to pulmonary function testing. She says she rarely suffers from burnout in her new setting.

Compassion fatigue

The kind of burnout Rosey and Cothrell suffered is often called "compassion fatigue." Dr. Charles Figley, director of the Tulane Traumatology Institute at Tulane University in New Orleans, LA, defines it as "an extreme state of tension and preoccupation with the suffering of those being helped to the degree that it can create a secondary traumatic stress for the helper."[2] People who suffer from compassion fatigue care too much and it takes a toll. The Compassion Fatigue Awareness Project says the solution is to educate caregivers about sustainable self-care strategies and to help organizations ensure they are providing the compassionate care these caregivers need in order to keep delivering the best patient care possible.

Beth Mogensen, BS, RRT, RRT-NPS, is hoping to do some of that in her new position as nightshift educator for the RT department at Children's Healthcare of Atlanta in Atlanta, GA. The 35-year veteran of respiratory care has firsthand knowledge of the issues involved. Like her two Washington state colleagues, she went through a period of compassion fatigue-related burnout, in her case, while working in the hospital's NICU. "I feel like my burnout was due to the ethical dilemmas that we face daily," says Mogensen. "Our babies are transported in and come to us for surgery, genetics workup, or possible ECMO. Many of our little ones really seemed to be suffering and yet continued to be full codes."

Mogensen says the parents of these medically fragile infants often have a hard time looking beyond the immediate treatment to see the child's long-term prognosis, and the ethical dilemmas began to weigh on her mind. "It became very stressful, and it got to the point that I noticed I did not look forward to going to work," says the AARC member. "I realized that my attitude was affecting others negatively and that I needed an attitude adjustment or I needed to change where I worked."

She found relief by moving to the emergency department. That's certainly a stressful setting as well, but for her, being able to treat children and – most of the time, anyway – see them get better and go home proved to be the right medicine for her burnout. The quick "get them in, get them out" mindset in the ED also relieved her of the need to develop long-term bonds with patients and families, and she says she loved being able to talk to her young patients. "One little girl commented on how she liked my sparkly shoes – it made my night," says Mogensen.

Now, as nightshift educator, she is planning to do what she can to help other therapists maintain their passion for the profession. "As I get closer to retirement, I want to be able to share my experiences, helpful hints, and critical thinking skills with the up and coming RCPs to help them keep the lights on!"

Other types of burnout

Not everyone who suffers a bout of burnout is dealing with compassion fatigue. For AARC member Martine Eon, BS, RRT, RRT-NPS, RPSGT, AE-C, it was a combination of leadership restructuring within the hospital and a personal trauma that lead her to a new career path. The recent loss of a parent, and the change in organizational accountability that she felt impacted quality of care, diminished her joy in work.

She dealt with the problem by going back to school for an advanced degree, which opened the door to new opportunities. Now a clinical specialist for lung health in the Center for Health Improvement at MaineHealth in Portland, ME, she is responsible for influencing quality improvement and patient safety policies for patients and clinicians across the health system. "The work I do is very rewarding," says Eon. "Do I skip into work every day? No, but seriously, I feel respected and appreciated for my contributions and have rediscovered joy in my work."

Chris Huff, RRT, has been in the profession for 42 years now and has experienced burnout from time to time throughout her career. "The main cause was probably just repetition of the same tasks in one setting, even while attempting to keep it fresh and engaging," says the AARC member. She also found help by reinventing her career.

"Over the years I worked in large teaching institutions, small community hospitals, worked as a home care RT,

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had a successful run in sales, served on my local state respiratory association board of directors, and worked in a NICU," says Huff. "Now in the waning years of my career, I am loving working with three pulmonary MDs assisting with navigational bronchoscopies and EBUS procedures, teaching two classes in a pulmonary rehabilitation program, and facilitating a monthly support group for patients with chronic lung disease."

This diversity in work setting has kept her going strong, despite a few setbacks here and there. "I think the key is understanding your own personality and finding which aspects of different jobs play to your strongest skills… and being willing to step out of your comfort zone sometimes to develop new expertise," says Huff.

When bad things happen to good careers

For many people, though, it is a forced change in job situation that leads to a period of burnout. That was the case for Sylton Hurdle, BSRT, RRT, back in the mid-1980s. He had risen up the ranks in a company that contracted RT departments prior to the introduction of the federal government's Diagnostic Related Groups — a payment strategy that made that model untenable.

"This type of business lost its favor and I found myself out of a high-paying management position," explains Hurdle. "Thankfully, I was licensed and could go back to patient care." After about 10 years, though, he was once again experiencing symptoms of burnout and decided to leave the profession for the financial services industry. Seven years later, that market tumbled as well, putting him right back where he started. Once again, he pulled himself back up and decided to give respiratory care another try.

"That was 2002, and today after much hard work and a bit of retraining, I am managing in RT education and loving it," says Hurdle, who serves as RT program director at Concorde Career College in Garden Grove, CA. For him, the key to his success has been to never lose his passion for respiratory care. "If experiencing burnout, try transitioning to another aspect of RT. Do not be afraid to retrain [and] obtain an advanced degree or additional certifications. I earned my BSRT at 58."

NAM gets into the act

Now-retired AARC member William French, MA, RRT, says he suffered from burnout more than once during his long career and believes it's a subject that deserves to be brought out of the shadows in respiratory care, just as it has been in medicine and nursing. "My own interest in the subject is both personal and peripheral to my larger interest in the integration of humanities into health care," says the long-time RT clinician and educator. "I firmly believe that our profession has ignored this critical issue for far too long." French points to the National Academy of Medicine (NAM), which recently launched a website to disseminate information on the topic, as a great example of what is being done in the larger medical arena.

NAM's Clinician Well-Being Knowledge Hub addresses a range of issues involved in clinician burnout and what they mean for patients and clinicians alike. Innovative strategies to overcome burnout are covered as well, including the use of arts and the humanities to promote healing.[3] Last May, the NAM held a meeting on clinician well being that featured a display of paintings, photographs, and videos depicting the experiences clinicians, their families, and their patients have had with burnout. The exhibit included poetry written by caregivers trying to cope with burnout as well.[4] Formerly known as the Institute of Medicine, this is the same organization responsible for the 1999 report titled "To Err Is Human," which is credited with driving the patient safety movement. Its new push to improve clinician well being is expected to spur similar progress on the burnout front.

Resiliency training

Some hospitals are stepping up their efforts to help clinicians deal with burnout too. Duke University Medical Center in Durham, NC, offers a two-day course through the Duke Safety Center for anyone inside or outside of the hospital who wants to learn more about fostering resilience in clinicians. Andrew Miller, RRT, RRT-ACCS, RRT-NPS, decided to sign up when he began feeling the symptoms of burnout and is glad he did. "I learned a number of evidence-based strategies to help with resilience and burnout, but the most important lesson was on actively cultivating positive emotions such as joy, hope, and gratitude," says the AARC member. "Unlike what many of us believe or have been taught, we can learn to be more positive." The course gave him the skills he needs to channel these positive emotions so they can serve as a reservoir when times get tough. "We are on the front lines for a lot of death, pain, and suffering," says Miller. "We need to work to notice and appreciate the positive aspects of our jobs and personal lives."

Miller cites these six strategies as his main take-aways from the course and says he is applying them to his life every chance he gets —

- **Three good things:** At the end of your shift, write down three good things that happened. The idea is to retrain the brain to focus on the positive rather than the negative.
- **Cultivating Awe:** This writing exercise is designed to help people recognize and appreciate something wonderful they've seen or done. Miller says he wrote about seeing the Starry Night painting by Vincent Van Gogh at the Museum of Modern Art in New York City.
- **Gratitude Letters:** Learn to be more thankful by penning a note to someone who has meant a lot to you

Talent Transfer

RTs who burn out in one area of the profession can take a lesson from sports to find another

by David Lain, PhD, JD, RRT, FAARC, FCCP

If you search the Internet for "talent transfer" you'll discover numerous articles, papers, documentaries, and other information related to athletics. In athletics, coaches, analysts, and sport scientists make a habit of studying athletes in order to maximize their potential. For some, their chosen sport isn't necessarily where they'll reach the highest levels. They may be better suited to outperform those competing in another sport instead.

Hershel Walker is a great example. Walker was a running back for the University of Georgia and a Heisman Trophy winner. He was big, fast, and as a football player was good at pushing. He was identified as an individual who might excel at pushing a bobsled too. He didn't spend years tolling away to become an Olympian. He was playing for the Minnesota Vikings, and only when the football season was complete (about a month before the winter Olympics) did he begin training for the Games. The USA did well, finishing seventh with Walker on the team.

Sport is filled with examples of athletes who made changes to extend their careers or find new arenas in which to succeed with their current skills. But talent transfer isn't exclusive to sports; it's a method to expand your career as a respiratory therapist as well. Respiratory therapists are ideally suited to take their talents and transfer them to other arenas in respiratory care or health science.

Suppose you're a respiratory therapist who has been assigned to work adult critical care. After a number of years you may find you are beginning to feel a bit anxious for something different. You could go back to school and learn something new. Or you could take your respiratory care skills and migrate over to neonatal critical care. The two areas of care have similarities as well as major differences — neonates are not tiny adults.

Now suppose that does not appeal to you, but you have developed an interest in pulmonary function testing. The pulmonary lab is a fascinating place and could satisfy your thirst for a change.

Of course, transferring from one area of respiratory care to another isn't seamless. There are new skills in each setting. While you may have a didactic understanding of them, the hands-on expertise isn't innate, but you will learn that the gaps in skill aren't overwhelming and your prior talent will accelerate your development in the new applications of your fundamental knowledge.

Over a career, a respiratory therapist can gain significant levels of expertise throughout our domain of practice. By making adjustments and transferring talent, a therapist can become one of those vertebrates in the backbone of a department. By seeking new challenges, the years you spend as a therapist can grant you compiling rewards and keep your passion fueled. You may further find that the career you've chosen is one that is unlikely to ever become stale.

David Lain is a recently retired RT and AARC Fellow living in Athens, GA.

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— teacher, parent, coworker, etc. — telling them how important they have been to your life. "If you're bold enough, you can read this aloud to them," says Miller.

- **Resilience Writing:** Write about a traumatic experience you've had for 20 consecutive minutes on three consecutive days without regard to punctuation or grammar. This exercise allows you to process the trauma by putting it into language. Once you're finished, throw it away.
- **Signature Strengths:** Take an online survey to identify your best strengths. Miller says his three were love of learning, humor, and integrity.
- **Acts of Kindness:** Do something nice for someone else. "Little acts of kindness can pay big dividends," Miller notes. This can be anything from taking the time to give someone directions to complimenting someone on a job well done.

"I am trying to do all of these practices periodically but have found the one that works the best for me is offering genuine thanks for those who are helpful," says Miller. "We take our best teammates for granted and we need to make an effort to provide them with praise and positive feedback."

Now that he's completed the course, he has become a resilience ambassador at Duke and is helping others by encouraging them to use the tools he learned during the class. Miller believes they can work for just about anyone. "You won't be able to change overnight, but by making an effort every day, over time you'll be in better place and can help your colleagues."

RT strong

The drive to address burnout in health care is growing, and more and more studies are showing it's past time to do something about it. Patient safety depends on it. A recent survey conducted by Stanford University investigators, for example, found physicians who reported making medical errors were significantly more likely to be suffering from burnout than those who did not.[5]

Respiratory therapists are responsible for delivering hands-on care to patients every day. Like their colleagues in medicine and nursing, they are susceptible to compassion fatigue, burnout, and other mental health issues related to the stress of delivering that care. As the stories in this article show, dealing with burnout is multi-faceted. But the good news is, RTs are finding ways to emerge from the situation stronger than before. ■

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AARC Congress

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Pre-Courses: Monday, December 3
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Time: 1:00pm – 5:00pm

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Registration for multiple pre-courses is only permitted for those courses which DO NOT run concurrently.

4 More Can't-Miss Sessions in Vegas

2018 Congress speakers offer a sneak peek at featured lectures at this year's annual meeting

This year's Congress speakers will reignite your passion and renew your focus in ways that will have you excited about returning to your practices, patients, and organizations after the AARC Congress. Nothing can beat the live, face-to-face sessions being offered as you capitalize on your investment in the AARC, expand your knowledge, and find solutions to everyday issues, problems, and challenges. Here's what our speakers are excited about — and you should be, too.

Photo courtesy of Las Vegas News Bureau

1 Gain a Seat at the Table and Lead the Advanced Care Planning Process

Kim Bennion, MsHs, RRT, CHC

Have you ever asked yourself if what you are currently doing will ever make a difference for your patients or your profession? It is a natural rhetorical question to ask during the progression of your career.

In 2014, a COPD playbook was created that reported baseline outcomes, gaps in care, and proposed solutions to more fully refine and implement the Advanced Care Planning processes for patients with COPD. The last few years have been spent making that vision a reality.

After participating in the National Committee for Quality Assurance's (NCQA) *Serious Illness Collaborative* with 10 health care organizations across the nation to include trainings, tools, and key initiatives with specified due dates for aggregate data reporting, the impactful outcomes are ready to be shared. Understanding and leveraging those results will prove highly effective for patients and the profession.

Hear the fascinating aspects of the NCQA collaborative, find out key steps you can use to advance respiratory therapists in the Advanced Care Planning discussion, and consider how you might create a COPD playbook for your organization to forward yourself as a leader. Believe it or not, technology may not always be the answer!

Kim Bennion is an RRT and program manager in Murray, Utah, with 30 years of embedded service to her profession, patients, and community. ■

2 Fostering Innovation When It Comes to At-Risk Extubations

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

The extubation of a patient from mechanical ventilation is a routine event for respiratory therapists working in the ICU. There is a lot of research to support therapists and providers in successfully determining when a patient no longer requires mechanical support from a machine. There isn't as much research, however, to help predict or identify patients who may struggle after extubation and ultimately require re-intubation.

For respiratory therapists working in the ICU, it is vitally important to be able to identify and prepare for patients who, despite all best efforts, might require significant unplanned support after extubation.

This presentation will cover what data-driven science says about identifying patients at risk for re-intubation. Examples include models and strategies that some facilities have been using to identify patients at risk for post-extubation failure. We will address post-extubation stridor, bridging extubation with noninvasive ventilation and high-flow nasal cannulas, the use of pulmonary toilets, and strategies to approach extubating the patient with a known difficult airway.

Do you want to gain knowledge of best practices available to ensure the safest and most successful extubations possible? If you have been thinking about improving your performance and the outcomes for your patients, you will be able to combine what you learn with your existing knowledge base to achieve operational excellence. The time is now, and it's more important than you realize.

Carl Hinkson is a pulmonary service line director in Washington state, author, national speaker, lecturer, and lifelong advocate for the respiratory care profession. ■

Photo courtesy of Las Vegas News Bureau

3 Beyond Traditional Approaches: Understanding the Meaning of Less Invasive Surfactant Administration

Shari Toomey, MBA, RRT-NPS

The use and administration of surfactant in the neonate has evolved since the early 1990s. Infants born at less than 28 weeks gestation or less than 1,500 grams have a higher incidence of developing respiratory distress syndrome (RDS) due to surfactant deficiency. The traditional approach for surfactant delivery is to provide endotracheal intubation and administer the surfactant to the patient with the use of positive pressure ventilation (PPV). The use of PPV, however, is directly related to the development of chronic lung disease.

Minimizing the incidence of chronic lung disease and other morbidities and the development of alternative procedures for surfactant administration are now being studied. Alternative methods presently being studied include aerosolized surfactant administration, the use of a laryngeal mask airway, and catheter insertion.

The common denominator in all of these administrative approaches is providing the best care to patients while causing the least amount of damage. It's time to give up on present-day delivery methods that damage patients' lungs and increase mortality and morbidity.

Learn about the advancement of technology to include nebulization and the availability of products designed for our smallest patients. The possibilities of administrating surfactant noninvasively without the need for PPV or the use of mechanical ventilation will change practices in neonatal ICUs across the spectrum.

Shari Toomey is a neonatal/pediatrics clinical team leader who is passionate about furthering attention to respiratory care research and ensuring quality of patient care. ■

4 5th Edition AACVPR Pulmonary Rehabilitation Guidelines Update

Cheryl Hoerr, MBA, RRT, FAARC

A lot has occurred since the last publication of the 4th Edition of the National Guidelines on Pulmonary Rehabilitation in 2011! Nearly every chapter has been totally rewritten, with new chapters and appendices added. The new guidelines speak to all the latest advances based on best practices and evidence.

Pulmonary rehabilitation (PR) involves a multidisciplinary team that includes the RRT, RN, RD, PT, OT, speech therapist, social worker, psychologist, etc.

The chapter "Selecting and Assessing the PR Candidate" sets the foundation for programs with a thorough patient assessment and moves on to education, therapeutic exercise, psychosocial intervention, nutrition, and long-term adherence. The updated guidelines cover all the chronic lung diseases in addition to COPD, and they serve as an evidence-based roadmap for PR programs across the country.

Expanded emphasis is placed on collaborative self-management, education, and psychosocial and nutritional components. The chapter on program management and reimbursement realities is expanded, with a focus on the latest "live" reimbursement information. An entirely new chapter, "Pulling It All Together," wraps up the 5th Edition of the book, explaining how program delivery, design, and quality affect patient outcomes.

Attendees will learn a thoughtful approach and receive robust analytics and valuable tools to assist with overcoming patient and program challenges to achieve clinical and operational improvements and results. Arm yourself and your pulmonary rehabilitation department with the 5th Edition AACVPR Pulmonary Rehabilitation Guidelines.

Gerilynn Connors is a clinical manager for respiratory care outpatient services in northern Virginia; she co-authored the first edition of this pulmonary rehabilitation textbook. ■

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Las Vegas: Dazzling in the Desert and Kid Friendly, Too

by T. Denise Stokes

Lots of people think of Las Vegas just as a have-it-all destination for adults who love to gamble, drink, stay up all night, and party. There has always been that, as well as a plethora of high-end attractions, shows, and world-class restaurants to go along with it. But the city also has a less publicized family-friendly side that offers interesting, unique options you hardly hear about on the easily walkable three-mile Las Vegas Strip.

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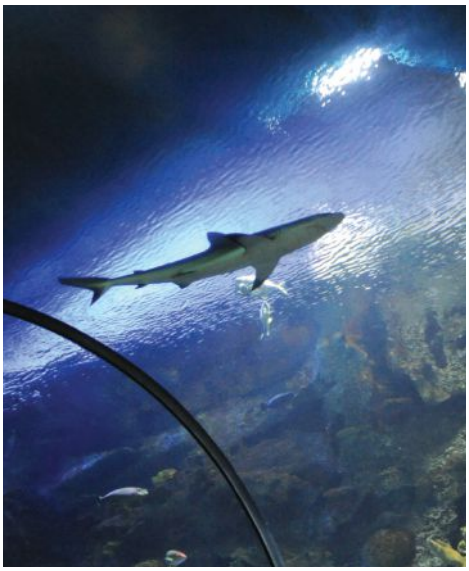

Did you know you can become a high roller in Las Vegas without ever stepping into a casino, and it is a kid-friendly activity, too? The tallest Ferris wheel in the world, **The High Roller**, resides in Las Vegas. Make sure you take a bathroom break before getting into the futuristic looking pod with the kids because it is a non-stop 30-minute ride. Book online or try Groupon to get the best prices on tickets. The city views range from awesome to incredible to breathtaking — morning, noon, and night. Please note that the occupancy can go from spacious to crowded, depending on the number of people in the pod with you.

Or maybe you would enjoy an activity that includes padded walls, flight gear, a free fall experience and a safety net — and it's considered fun? Choose the **iFLY** experience and get ready to be blown away. It is just like skydiving — minus the plane — and offers an adrenaline rush like no other.

Two kid-friendly and kind of quirky places that come highly recommended from a mom with two kids are the Mob Museum and the Neon Museum. It's best not to ask too many questions, though, when you get to the **Mob Museum**, a.k.a., The National Museum of Organized Crime & Law Enforcement. The stories and histories of many notable names are authentic and on display here in what used to be an old federal courthouse. How fitting! The exhibits, tracing the history of the mob in Las Vegas and its impact on the world, are interactive and it can take anywhere from two to six hours to get through.

Tours at the **Neon Museum** are divided into day and night tours. Needless to say, nighttime is the ideal time to visit. Guests of all ages thoroughly enjoy this shrine and showcase of the city's neon legacy. The keepsake you get to take home at the end makes it memorable, fun, and well worth it.

Are your kids theme park fans, but you never have time when you're at home? America's largest theme park screams for your attention inside **Adventuredome** at Circus Circus Hotel and Resort. It is on the opposite end of The Strip from where you're staying.

Is there anyone who is scuba certified? If you're staying at the Mandalay Bay Hotel, the AARC Congress headquarters hotel, you won't even have to leave the premises to dive with the sharks at the **Shark Reef Aquarium**. How cool is that? The experience has been around for a while, but it is worth a reminder. Don't worry, the sharks have already been fed. It is also best that you wait until your Congress agenda is over for the day because the pure thrill of it will dominate your thoughts until you actually do it. You even get a video to take home with you!

Another exciting and eclectic activity to consider is a visit to the **Pinball Hall of Fame**. It is hands-down the only place you can walk into in the whole town with $5 in your pocket and actually walk out happy! If you've been a lifelong fan of pinball games, you're going to love this place. Many rare gems reside in the collection of 150 machines.

Looking to extend your visit and get in a peaceful escape before you head back to the hustle and bustle of everyday life? **Red Rock Canyon** is the Mojave Desert in Technicolor. You will marvel at the forces of nature at work. The beautiful scenery inspires rock climbing, hiking, biking, camping, and more. It is suitable for visitors of all ages.

The world's largest video screen at **the Fremont Street Experience** will make the entire family stand still in awe, eyes popping and jaws dropping. Earlier this year in January, the brilliant light show developers were

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The AARC Respiratory Patient Advocacy Summit builds partnerships between chronic respiratory patients, caregivers, advocates, physicians, and respiratory therapists. It aligns these groups toward the goal of improving patient care, equipment, and services.

The Summit includes lectures and discussions with top physicians, inviting respiratory therapists and advocates to share their clinical insights and strategies to improve patient care. Guests will also participate in roundtable discussions and connect with influencers in the respiratory industry. **Registration is free. Sign up today!**

Lunch and refreshments will be provided

After registration, you will receive an email notification with additional meeting details. Parking vouchers will be provided. Registration deadline is Monday, November 19.

Who Should Attend the Summit?

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- ✓ Patient advocates
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- ✓ Respiratory therapists and physicians

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Pulmonary Hypertension: A Caregiver's Perspective – Steve Van Wormer

National Patient Advocacy Award Presentation – *A collaboration between FACES Foundation and AARC - Sharman Lamka, President & Co-Founder, The FACES Foundation*

Foundation Roundtable

ARDS Foundation – Ellen Rubin, JD, President

Physician-Patient Alliance for Health and Safety – Michael Wong, JD, Executive Director

Alliance for Patient Access – Susan Hepworth

Cystic Fibrosis Foundation – David Elin, MSW, Director, Policy & Advocacy

The Summit is held in conjunction with AARC's International Respiratory Congress Dec. 4-7

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seeking approval for an overhaul to the attraction. The good news is that the show will go on during its upgrade.

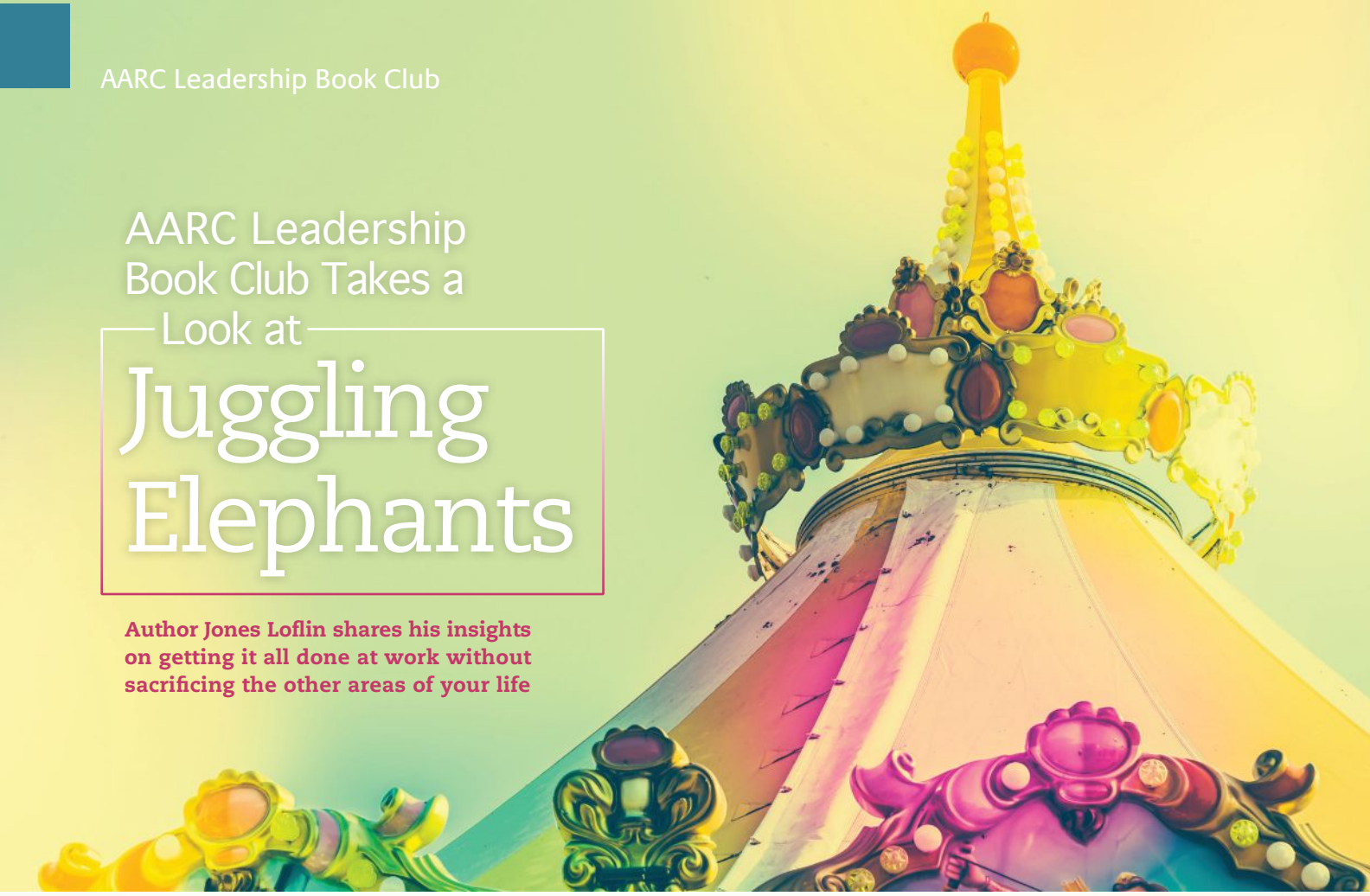
This one was saved for next to last: FREE gourmet premium CHOCOLATE. Yes, it's true. Once inside this working chocolate factory, you will be surrounded by oooh's, aaaah's, and yuuuummmm's. Here is a piece of trivia to take with you. Did you know that after the owner of Mars, Inc., the maker of M&M's, Snickers, Dove Bars, etc., retired, he created Ethel M Chocolates! Ethel M was the beloved mother of Forrest E. Mars, Sr. Take the 15-minute drive outside of Vegas and see chocolate making in action. If you have some extra time, don't miss the Holiday Cactus Garden. It is an incredible display of lights, and you will have lots of pictures to post to your social media accounts to prove it.

Maybe you're not traveling with kids and would like to treat yourself to an A-list musician in concert? Here is a smorgasbord of artists to choose from when you arrive in December: Justin Timberlake, Andrea Bocelli, Florida Georgia Line, and Rod Stewart. There are many more — literally every genre of music is represented.

If you've never been to Vegas in the winter, it can get chilly in December with the average high of only 58 degrees, compared to its summer average of 106–110 degrees. If you are coming from Chicago, New England, or North Dakota, that could seem like a heat wave, though. With the blistering searing heat of the summer behind you, Las Vegas will be amped up for the holidays by the time you arrive for your Congress event. Long pants, long sleeves, jackets, and sweaters will serve you well as you take your skills to the next level, meet experts and influencers, and connect with like-minded individuals. ■

T. Denise Stokes is a public relations/marketing consultant and writer in the Washington, DC, area.

AARC Leadership Book Club Takes a Look at Juggling Elephants



Author Jones Loflin shares his insights on getting it all done at work without sacrificing the other areas of your life

Several times a year, AARC members get together to read and discuss a book on leadership via the Association's online Leadership Book Club. Everyone's invited, and there's no pressure involved — you can read the whole book, some of it, or just check in to see what's happening in the discussion.

Earlier this year the book was *Juggling Elephants: An Easier Way to Get Your Most Important Things Done — Now!*, and one of the two authors, Jones Loflin, graciously agreed to lead the discussion. In this interview with *AARC Times*, he tells us more about the book and what he learned from networking with AARC members about this important topic in all of our lives.

What inspired you and your co-author, Todd Musig, to write *Juggling Elephants?*

Todd and I started working together for the training company [based on the best-selling book, *Who Moved My Cheese?* It was there that we saw the power of a parable in helping people and organizations solve a problem. In the case of *Who Moved My Cheese?*, the problem to be solved was the resistance to change.

At the time we were both crazy-busy building our careers, attempting to be the best spouses and parents we could be, and still trying to find some time for our own personal renewal. We knew there had to be some model, some metaphor that could help us get some traction in dealing with the struggle of too much to do. *Juggling Elephants* is the result of looking for a solution for our own lives, and then wanting to share the message with others.

The book centers on a character named Mark who attends a circus with his family and sees a parallel between the three main parts of his life and the three rings of a circus. How did you come up with that analogy?

One day, while working in his yard in Sandy, Utah, Todd and I began discussing the struggle of too much to do once again and how it was affecting all areas of our lives. At

one point Todd said, "Sometimes I feel like my life is a circus." I stopped what I was doing and said, "Say that again." We then began building out what our life *should* look like if we managed it like a circus. We looked at all parts of the circus, including the ringmaster, the rings, the performers, and even the intermission to see what we could learn from them to apply to our own situations.

Your three rings represent work, self, and personal, and you stress the need to keep "quality acts" in all three. What is your best advice to people about making that happen?

I think it starts with being mindful that you have three areas that need your attention. Many people plan so intensely for their workday, but do very little to plan for the relationships in their lives. They simply hope there will be time available for these important people after everything else gets done. As for the "self-ring," it's the one we neglect most often. We've all seen the result of individuals who neglected any one of their rings for an extended period of time.

The second key is to plan for all three areas — being more proactive about including activities that meet the criteria for each ring.

You mentioned the need for regular "intermissions" from the daily juggling that takes place in those three rings. What do you mean by that, and how can people incorporate these intermissions into their busy lives — particularly direct caregivers like respiratory therapists, who must go from patient to patient throughout their shifts to deliver care?

Intermissions, as we define them in *Juggling Elephants*, are those moments you step away from the busyness in your work or life. I sum it up with the "3Rs." They give you the opportunity to *rest* (physically, emotionally, and/or mentally), *replenish* what's missing for you, and *refocus* on what's coming next.

The length of an intermission could range from 30 seconds to 15 minutes to a two-week vacation. The key is to use that time NOT to get more work done, but to renew your energy that has been so depleted by trying to get everything done.

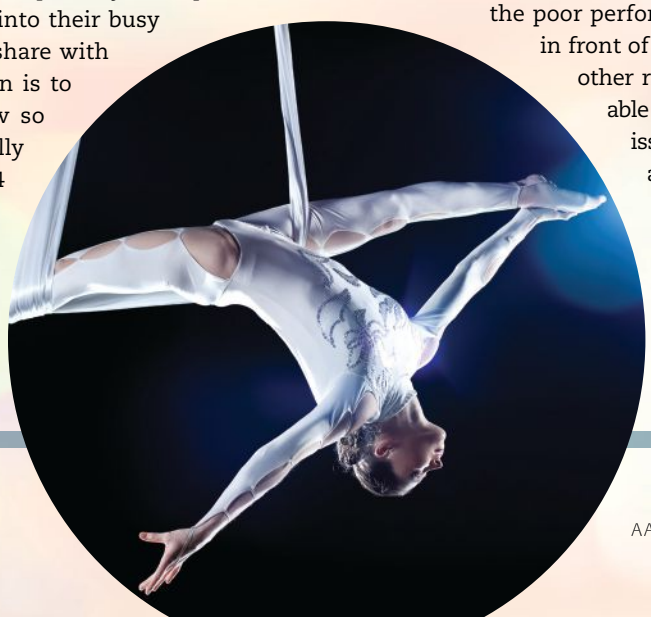
I smiled when you asked how respiratory therapists could incorporate an intermission into their busy routine because one of the ways I share with people to take a quick intermission is to practice deep breathing! RTs know so well the benefit of doing it. I personally use the "4-7-8" technique. Count to 4 as you inhale, hold it to the count of 7, and release it to the count of 8.

Another key component of your book addresses the need to work with other "performers" and the role communication plays in that effort. As you know, teamwork is paramount in health care today — how can respiratory therapists effectively address their three rings and still ensure they are working as integral members of the team?

I see the need to address their own three rings and working effectively as part of a team as mutually beneficial. If you're not taking care of your own personal well-being, you are limited in your ability to think, listen, and act as efficiently as needed. If you aren't taking care of the relationships in your life that give you so much mental and emotional energy, you can be distracted from the present moment as your brain reminds you of that neglect.

One of the "acts" we talk about in the book is the trapeze act. It teaches us that every team member has to be fully engaged if the act is to be successful. If just one of those team members is neglecting one or more of the rings in their life, they are endangering the overall success of the team.

That's why I think it's so important for managers to notice when their team members aren't fully contributing to the team and to talk with them in appropriate ways. Oftentimes the poor performance isn't related to the work in front of them, but a neglect of one of the other rings in their life. You may not be able to help them solve those types of issues, but just being a good listener and getting them to acknowledge this stress can help them start the improvement process.



In fact, one technique that managers can use is to simply draw the three rings, labeling them "work," "self," and "relationships." Tell them to think about their life as a circus and explain the three rings. Then have them rate themselves from 1 to 10 on their level of satisfaction for each ring. This gives them a strong visual on what might need to change for them to improve.

The chief goal of your book is to encourage people to become the ringmaster of their own circus. What does that mean to you and why do you think it is so important when it comes to helping people keep their priorities straight, whether that be at work, home, or for themselves?

Being the ringmaster of your circus doesn't mean you are in control of everything. To me it means taking more conscious control of how you are using your time to accomplish your highest priorities. Too often I think we allow other people or circumstances to dictate where our time is spent. It's like allowing someone watching the circus to step into the ring and start making decisions about what acts should be in the lineup. They don't have a full understanding of why things are lined up in a particular order or why certain performers are being used.

An interesting moment in one of my training programs based on the book is when I ask someone to tell me the purpose of the circus. They immediately respond with, "to entertain." While that may be *their* perspective, the owner of the circus would see things quite differently. The owner would say the purpose is to make money. The way he or she does that is to *be* entertaining. The same thing happens within organizations. Because there isn't clear consensus on purpose or goals, people have very different ideas about how resources should be used. A good ringmaster makes sure everyone is clear on purpose so that everyone's time is used wisely. It goes back to being more mindful.

You recently shared many of your perspectives on this book with participants in the AARC's Leadership Book Club. What did you learn from interacting with the AARC members who took part in the discussion, and how will those bits of knowledge inform your thinking about "juggling elephants" going forward?

I was thrilled with the quality of the discussions we had in the book club. The AARC members who took part are definitely individuals who are "juggling elephants." What was affirmed to me in the discussions is that none of us are immune from getting caught up in the struggle of too much to do. The enormous demands placed on leaders and managers in health care today can cause even the most seasoned individuals to start "checking the boxes" instead of stopping themselves to determine which tasks they should be engaging in to improve outcomes and move their teams forward.

The other "aha" for me was the stigma still attached to talking about trying to get it all done. I remember one post by an individual who said, "I thought I was the only one struggling with these kinds of things." I would hope that any manager or leader would welcome the chance to improve the quality of work of their team members by helping them better manage their time. Unfortunately, too many people don't have that level of trust with their supervisor, so they just put their head down, hoping things will get better. And we know how that works out.

You also spoke at this year's AARC Summer Forum in San Antonio. What did you talk about there, and what was your key take-home message for the respiratory care managers and educators in attendance?

The key focus of my comments was how to improve their ability to focus on the right work. There are so many internal and external distractions facing these managers and educators, and they have to minimize or manage them more efficiently if they are to get the work done that will ultimately improve patient outcomes and advance the field of respiratory care.

I encouraged them to think like a "gardener." Simply put, they were to create an environment where the right work could "grow" and they could be more intentional about cultivating routines and relationships to move their ideas forward. I also challenged them to "prune" some of their bad habits related to time management. Finally, I encouraged them to celebrate more "harvest moments" or small wins for themselves and their team to help sustain their motivation to change for the future. I reminded them that they are in a "growing season" that offered resources that might not be available in the future, so it was important for them to start growing NOW! ■

Sign Up Today!

How can you join the Leadership Book Club? Just go to AARConnect (connect.aarc.org) and click on "Communities," then "Leadership Book Club." Once on the page, click on "Join Community" to see what the group is reading now and start taking part in the discussion.

Industry Watch

Warren Alpert Foundation honors CF researchers

The Warren Alpert Foundation, in association with Harvard Medical School, is honoring five trailblazing scientists for their work in cystic fibrosis: Francis Collins, from the National Institutes of Health; Paul Negulescu, from Vertex Pharmaceuticals; Bonnie Ramsey, from the University of Washington School of Medicine; Lap-Chee Tsui, from the Academy of Sciences of Hong Kong; and Michael Welsh, from the University of Iowa. "The five scientists' collective work powerfully illustrates the promise of basic discoveries made in the lab to profoundly alter the lives of patients," said George Q. Daley, dean of Harvard Medical School.

Windtree Therapeutics completes design verification for new ADS

Windtree Therapeutics, Inc., has successfully completed design verification of its new proprietary aerosol delivery system (ADS) for AEROSURF®. It enables noninvasive delivery of aerosolized KL4 surfactant to premature infants with respiratory distress syndrome. Verification indicates that the ADS has met rigorous performance and reliability testing criteria and may be used in future clinical trials and, if approved, commercially. In advancing the ADS from the Phase 2 prototype to the Phase 3 design, Windtree incorporated several important advancements in ease of use, set-up, and reliability, along with multiple design enhancements intended to mitigate filter clogging that occurred in the Phase 2 prototype.

Pulmatrix forms advisory board for Pulmazole

Pulmatrix, Inc., has formed a Clinical Advisory Board (CAB) for Pulmazole, an inhaled iSPERSE™ formulation of the anti-fungal drug itraconazole for the treatment of allergic bronchopulmonary aspergillosis (ABPA) in patients with asthma. The members of the CAB are world-renowned experts in the fields of both ABPA and asthma and will work closely with Pulmatrix to design and implement future clinical studies of Pulmazole. "I am very encouraged by the Phase 1 results demonstrating that it is both feasible to administer itraconazole by inhalation and further, that high levels of the drug may be achieved within the airways," noted Dr. David Denning, co-chair of the Pulmazole CAB. "I believe that Pulmazole has the potential to significantly improve upon both the efficacy and safety profile of oral Sporanox."

Pneuma Respiratory announces new hires

Pneuma Respiratory, Inc., which has developed the PNEUMAHALER™, the first breath-activated digital inhaler, has hired Brian Thomas as project manager and Kade McNaughton as controller. Thomas comes to the company from senior science and technology positions at Stryker Corporation and Zimmer Biomet. McNaughton has handled all aspects of accounting and financial analysis responsibilities for a wide variety of clients as a consultant, as well as in corporate roles with Arthur Andersen and Lowe's Companies.

Park Associates report suggests big market for sleep products

New sleep research from Parks Associates reveals nearly 29 million U.S. households with broadband internet access currently own a product that helps them track their sleep quality. However, this represents less than half of the nearly 60 million consumers who report having at least one sleep problem. *Sleep & IoT: Behaviors, Awareness, and Opportunities* recently revealed that 51% of U.S. households with broadband internet are interested in buying a sleep technology device. Fifty-eight percent said that a sensor, device, or app that can detect and track potential sleep apnea/respiratory issues, potential restless leg syndrome, or potential insomnia issues would be valuable. Among them, 85% said they would be likely to see a physician based on this information.

Revon Systems receives federal funding for mobile COPD symptom tracker

Digital therapeutics company Revon Systems has been awarded federal funding for the development of standalone mobile applications that detect declines in patient health early and guide the patient to the right

level of care. Phase 1 work will focus on prototyping of the COPD Smart Symptom Tracker mobile application for optimization of patient adoption, retention, ease-of-use, and overall health. Phase 2 work, if awarded, would focus on complete commercialization of the validated product. So far, observational studies of Revon's respiratory therapeutics are showing a positive impact, according to a company spokesman.

Geisinger, AstraZeneca team up on asthma care

Geisinger and AstraZeneca have partnered to improve asthma care by creating a suite of products that integrate into the electronic health record (EHR). The goal is to engage patients and providers in co-managing the disease, especially during intervals between office visits. The mobile app data are connected to a real-time, web-based application called Provider Asthma Management Assistant. The assistant combines EHR and patient-reported data to enable asthma educators and respiratory therapists to triage patients on the fly and bring in specialists as needed. "Patients sometimes do a lot worse with their asthma than we know, based on a three-, six-, or nine-month periodic office visit," said Geisinger representative Paul Simonelli, MD, PhD. "This new suite of products could easily be adapted to any long-term chronic respiratory illness that needs monitoring, including COPD."

Call button-type device makes valuable connections

Homestead Health and Accessible Home Health Care-Houston have released a comprehensive case study of a new, innovative telehealth technology. The CareCaller™ for home health agencies and providers resembles a nurse call button and gives home health patients the ability to directly text and call up to three pre-established health care contacts. Patients are then connected to their care team to ask questions about their medical condition(s), confirm medications, schedule/reschedule follow-up appointments, report a worsening condition, or request urgent nurse assistance. At the end of the 12-month pilot, the company was able to document a 50% decrease in missed visiting nurse appointments, a significant increase in Medicare patient satisfaction ratings, increased client referrals, and a reduction of avoidable hospital admissions.

TFF Pharmaceuticals moves forward on patent for new dry powder drug delivery platform

According to TFF Pharmaceuticals, Inc., the U.S. Patent and Trademark Office has issued a Notice of Allowance for U.S. Patent Application No. 12/778,795, "Compositions and Methods of Making Brittle-Matrix Particles Through Blister Pack Freezing." The patent application concerns TFF Pharmaceuticals' novel delivery method for advanced-performance dry-powder drugs to be used in the treatment of pulmonary conditions such as lung transplant recovery, severe asthma, COPD, and pulmonary infections. The patent is expected to provide protection until at least 2033.

FDA approves Zephyr Valve for emphysema

The FDA has approved the Zephyr Endobronchial Valve (Zephyr Valve) to treat breathing difficulty associated with severe emphysema. The device is placed using a flexible bronchoscope and is intended to prevent air from entering damaged parts of the lung and to allow trapped air and fluids to escape. At one year, 47.7% of patients treated with Zephyr Valves experienced at least a 15% improvement in their pulmonary function scores, compared with 16.8% of patients in the control group. Adverse events observed in the study included death, pneumothorax, pneumonia, worsening of emphysema, coughing up blood, shortness of breath, and chest pain.

New "genetic" sleep study supported by NIH grant

Researchers from Florida Atlantic University (FAU), the University of Minnesota, and Stowers Institute for Medical Research have received a four-year, $1.68 million R01 research grant from the NIH's National Institute of General Medical Sciences for a study that will utilize genomic and transgenic technology to identify genetic loci that contribute to sleep, feeding, and metabolism in the Mexican cavefish. "The Mexican cavefish exhibits a dramatic evolution of sleep loss, hyperphagia or overeating, and obesity compared to a surface fish of the same species," FAU scientist Alex Keene, PhD, was quoted as saying. "They provide a unique and powerful model for identifying genetic factors regulating these traits." ■

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

— 2018 —

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

The AARC'S CORPORATE PARTNERS

The collaborative efforts between the respiratory care profession and manufacturers in pursuing unique and innovative ways to improve both the quality and outcomes of our patients makes us natural partners in today's ever changing health care continuum.

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

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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 Respiratory Care 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.

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RESPIRATORY CARE PATIENT-DRIVEN PROTOCOLS, 3RD EDITION

The pressure is on to efficiently operate a respiratory care department more economically. One of the most significant ways to accomplish safe and effective cost savings is through the use of protocols by respiratory therapists. Protocols have been scientifically validated as an effective method to reduce expenses and this manual is an excellent resource for the development, implementation, or refinement of care plans. Contains algorithms with each protocol.

ORIENTATION AND COMPETENCY ASSURANCE DOCUMENTATION MANUAL FOR RESPIRATORY CARE, 2ND EDITION

Take the worry out of documenting orientation and competency in respiratory care. With its easy-to-use digital format, this manual provides tools for documentation of compliance for Respiratory Care Services with the 2010 standards for CMS, IHI (Institute for Healthcare Improvement), and The Joint Commission. Terminology is consistent with the AARC's Uniform Reporting Manual. Includes guidelines in chapter format with reference to over 90 detailed competency documentation forms.

RC Currents

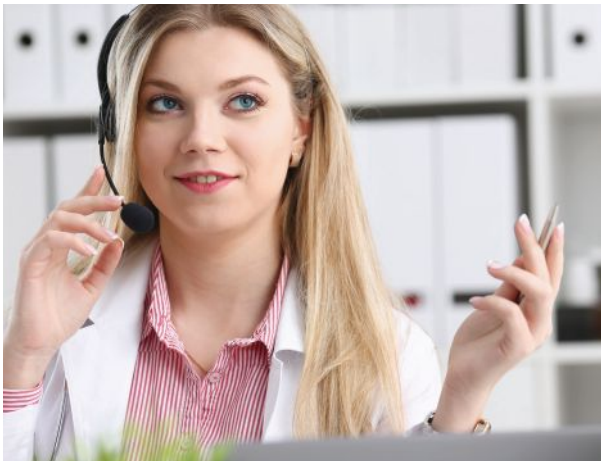
IN THE NEWS

Telemedicine Reduces Inter-Hospital Transfers

A telemedicine program that used a tele-intensivist working in collaboration with a bedside respiratory therapist to remotely manage patients admitted to Veterans Affairs (VA) ICUs resulted in a significant drop in the number of patients who required transfer to a higher level of care. The patients were managed remotely via a camera used to monitor the patients and to review vital signs and mechanical ventilator settings and waveforms. The researchers compared outcomes for 553,523 admissions, 97,256 to telemedicine hospitals and 456,267 to non-telemedicine hospitals. Specific findings, published in a recent edition of CHEST, revealed:

- Transfers decreased from 3.46% to 1.99% in the telemedicine hospitals and from 2.03% to 1.68% in the non-telemedicine facilities between pre- and post-telemedicine implementation periods.
- After adjusting for other factors, ICU telemedicine was associated with a greater reduction in transfers, and this reduction occurred in patients with moderate, moderate to high, and high illness severity, as well as in nonsurgical patients.
- Transfers decreased in patients admitted with both gastrointestinal and respiratory admission diagnoses.

ICU telemedicine was not associated with an increase in 30-day mortality. ■



Biomarker Blood Test for Lung Cancer Risk

Researchers from the University of Texas MD Anderson Cancer Center have developed a four-protein biomarker blood test aimed at assessing lung cancer risk not just in heavy smokers, but in people who have ever smoked.

The biomarker panel was able to identify smokers who later developed lung cancer without increasing false-positives compared to guidelines for screening approved by the U.S. Preventive Service Task Force for heavy smokers based on age and smoking history. "The biomarker panel more accurately identifies at-risk smokers who should proceed to screening, even if they're not at the highest risk based on smoking history alone," notes study author Sam Hanash, MD, PhD. "A positive blood test means an ever-smoker is as much, if not more so, at risk of having lung cancer as a heavy smoker with a low biomarker score."

The study was published in a recent edition of *JAMA Oncology*. ■

Contribute to Our "Transitions" Column

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

Pediatric Asthma Yardstick Will Guide Care

A new guideline from the American College of Allergy, Asthma, and Immunology (ACAAI) can help clinicians better determine which asthma controller treatments are right for which age groups of children and when a step up in therapy is needed. The Pediatric Asthma Yardstick was designed to serve as a roadmap for treating kids whose asthma is not well controlled. It focuses on three age groups: adolescents (12–18 years old); school-age children (6–11 years old); and infants and young children (5 years old and under).

"The Pediatric Asthma Yardstick is a practical resource for identifying children with uncontrolled asthma who need a step-up in controller medicine," says lead author and ACAAI President Bradley Chipps, MD. "The recommendations are presented around patient profiles, by severity and age, and are based on current best practice strategies according to the most recent data and the authors' clinical experience." The paper was published in the ACAAI's *Annals of Allergy, Asthma and Immunology*. ■

NIOSH Warns about Risks of Illicit Fentanyl Exposure

The National Institute for Occupational Safety and Health (NIOSH) has issued a warning to health care workers about the risks involved in exposure to illicit fentanyl. NIOSH notes that exposures can occur if patients or their personal items are contaminated with the drug, which can be present in powder, tablet, or liquid forms. Symptoms can be wide-ranging but could include respiratory depression or arrest.

NIOSH has published an extensive list of work practices for health care personnel who may be at risk for illicit fentanyl exposure to follow, training elements to include in programs aimed at workers employed in areas where exposure may occur, and advice on personal protective equipment that should be worn when the presence of illicit fentanyl is suspected. The document includes decontamination recommendations as well. Learn more at: https://www.cdc.gov/niosh/topics/fentanyl/healthcareprevention.html. ■

Reducing Alcohol-Related Symptoms in AERD Patients

People with aspirin-exacerbated respiratory disease (AERD) often experience additional respiratory symptoms when they drink alcohol. Researchers from the Perelman School of Medicine have found that the key treatment for AERD — aspirin desensitization — can help with these alcohol-related symptoms as well.

They reached that conclusion in a study conducted among 37 AERD patients who underwent both aspirin desensitization and surgery to remove preexisting nasal polyps caused by the condition. Before treatment, 78% of patients said they could only tolerate alcohol about half the time or less, while 42% said they never or almost never were able to tolerate it. The most common symptoms associated with drinking alcohol were nasal congestion, a runny nose, and wheezing.

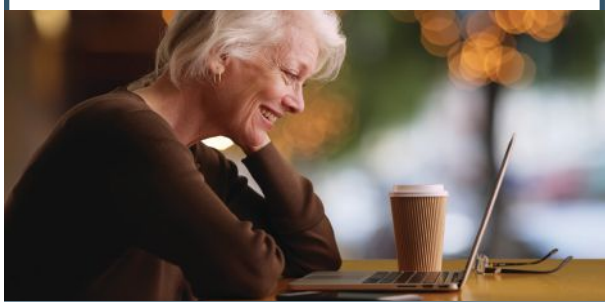
Following aspirin desensitization, 86.5% of patients said they could drink alcohol without experiencing these symptoms. Only four patients noted no improvement. The study appeared in a recent edition of the *International Forum of Allergy and Rhinology.* ■

Study Says E-Cig Flavorings May Damage Cardiovascular System

Flavorings found in e-cigarettes may be doing damage to the cardiovascular system, even without the presence of nicotine. That's the key finding from Boston researchers who exposed endothelial cells to various e-cig flavorings in a laboratory setting. Results showed that all nine of the flavorings tested, including banana, butter, cinnamon, clove, eucalyptus, mint, strawberry, vanilla, and "burnt," which imparts a popcorn or tobacco-like taste, damaged the cells. Vanilla, mint, cinnamon, clove, and burnt also impaired the production of nitric oxide, which is needed to reduce inflammation and help open up the blood vessels. The investigators published their findings in Arteriosclerosis, Thrombosis, and Vascular Biology. ■

Tell your career story

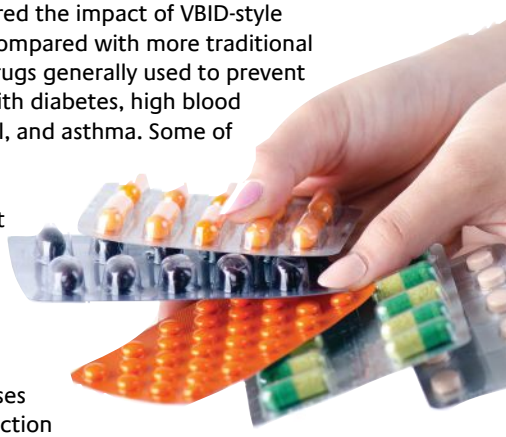
Our "Reflections" column is geared especially toward AARC members who have recently retired from the profession. We'd like you to look back at your career and tell us what it meant to you and why. Start brainstorming some ideas and then submit your story to *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org. ■



Value-Based Insurance Design and How It May Help Improve Medication Compliance

Would patients be more likely to stick with their long-term medications if they cost less? That's the premise behind a strategy called "value-based insurance design" (VBID), and a new study in Health Affairs suggests it does work for some chronic conditions.

Investigators from the University of Michigan looked at 21 studies that measured the impact of VBID-style prescription drug plans compared with more traditional plans. They focused on drugs generally used to prevent health issues in people with diabetes, high blood pressure, high cholesterol, and asthma. Some of the key findings were:



- All of the studies that examined diabetes drug use showed a significant increase in drug adherence with a VBID design, although in some cases it occurred in conjunction with coaching or a disease-management program.
- Nearly all of the studies of VBID designs for blood pressure medications showed improvement in adherence, and all of the studies of statins to lower cholesterol levels showed improvement in adherence with the VBID option.
- Just two of the five asthma studies showed an increase in adherence.
- Nine of the studies looked at health care spending for patients in VBID plans compared with those in conventional plans, with most showing that the insurer experienced increased prescription drug spending, and three showing that patients' out-of-pocket costs dropped significantly.
- When total costs were reported, two studies showed decreases in spending, and seven showed no difference, suggesting that increased spending on drugs was offset by decreased spending elsewhere.

While the findings on asthma drug use suggest VBID may not be as effective for people with asthma as it is for those with other chronic conditions, the strategy does seem to offer benefits over traditional insurance coverage. "Enhanced access to high-value drugs that did not lead to an increase in total spending is a win/win for both insurers and patients," senior author Mark Fendrick, MD, was quoted as saying. "If total costs are equal, using more medicines that prevent costly hospitalizations is clearly preferable to having people being admitted to a hospital." ■

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Improving the Preterm Newborn's Lung Development

An international team of investigators is working on a new microfluidics innovation to improve artificial placentas so that preterm newborns can properly develop lungs following birth. By constructing microchannels with a more efficient gas exchange between infant blood and air — and using both sides of the membrane for gas exchange — they can potentially deliver nearly a third of the oxygen preterm newborns need. The oxygenator device relies on the newborn's own heart to pump, making it feasible for use in places around the world with limited electricity. The research appeared in a recent edition of *Biomicrofluidics*.

Stem Cell Drug May Offer Hope for COPD Too

Could a drug used to stimulate the immune system to release a certain kind of stem cells into the bloodstream also be an effective treatment for COPD? According to researchers publishing in a recent edition of the *American Journal of Physiology—Lung Cellular and Molecular Physiology*, the answer may be yes.

The investigators examined the drug plerixafor, which boosts levels of hematopoietic progenitor cells (HPCs) and is used to treat some forms of cancer, after noting that previous studies had shown people with emphysema have lower levels of HPCs. All of the mice in the study were exposed to cigarette smoke, but only half of them received the drug. While mice that were not treated showed a decline in the number of HPCs, those that were treated did not. After two weeks, treated mice actually saw a rise in the number of HPCs. No significant changes in the number of white blood cells or inflammation were seen in the treated group. "Our report supports the usefulness of this FDA-approved drug as a potential treatment for emphysema," write the authors.

Explaining Gender Differences in Flu Recovery

A growth factor protein called amphiregulin may explain why men often recover from influenza faster than women, report Johns Hopkins Bloomberg School of Public Health researchers publishing in a recent edition of the *Biology of Sex Differences*. Amphiregulin is known to promote the proliferation of epithelial cells in skin, lung, and other bodily surfaces during wound healing, including recovery from lung infections.

Researchers had studied influenza in mice and in human cells. Both the male mice and the human cells from men produced more amphiregulin, and male mice recovered more quickly than female mice. Recovery time in male mice engineered to lack amphiregulin was similar to that seen in female mice. When mouse and human lung epithelial cells were infected with influenza in culture dishes, significant jumps in the production of amphiregulin were noted only in the cells that came from males. The investigators believe their work could lead to a new therapeutic treatment for influenza, especially in women.

Antioxidant Supplements May Delay Pulmonary Exacerbations in Cystic Fibrosis

U.S. researchers found a 50% reduced risk of time to the first pulmonary exacerbation requiring antibiotics in children with cystic fibrosis who were receiving supplemental antioxidants. The phase 2 trial was conducted at 15 cystic fibrosis centers associated with the Cystic Fibrosis Foundation Therapeutics Development Network, enrolling 73 patients who were age 10 and older and suffered from pancreatic insufficiency, which causes malabsorption of antioxidants. Thirty-six subjects received supplemental antioxidants in a multivitamin, while the remaining subjects received the multivitamin without the addition of supplemental antioxidants.

During the 16-week trial, 53% of the antioxidant-treated group experienced 28 exacerbations compared to 68% of the control group, which experienced 39 exacerbations. Supplemental antioxidants increased circulating antioxidant concentrations of beta-carotene, coenzyme Q10, gamma-tocopherol (a form of vitamin E), and lutein. However, while inflammation was decreased at four weeks, it remained unchanged at 16 weeks.

"While the antioxidant supplement did not appear to exert sustained anti-inflammatory effects, we believe its effect on time to first pulmonary exacerbation was significant and clinically meaningful," explains coauthor Scott D. Sagel, MD, PhD, director of the University of Colorado Cystic Fibrosis Center. The study appeared in a recent edition of the *American Journal of Respiratory and Critical Care Medicine*. ■

Another Component of the "Allergic March"

According to researchers from the Children's Hospital of Pennsylvania, children with skin, food, and respiratory allergies should be tested for another type of allergy known as eosinophilic esophagitis (EoE). EoE is characterized by inflammation of the esophagus and can lead to pain in swallowing, reflux, stomach ache, and even food impaction. Symptoms come on slowly and there is little risk of death, but morbidity is high.

"We found that if children had three allergies other than EoE, they were nine times more likely to develop EoE than children with no pre-existing allergies," says study author David A. Hill, MD. The peak age of EoE diagnosis was 2.6 years, and kids with EoE had a higher risk than those without EoE of developing allergic rhinitis as well. Dr. Hill and his colleagues believe EoE is just another part of the "allergic march" seen in early childhood and should be incorporated into screening programs for children with other allergies. The study recently appeared in the *Journal of Allergy and Clinical Immunology: In Practice*. ■

Low Vitamin D Levels Linked to Interstitial Lung Disease

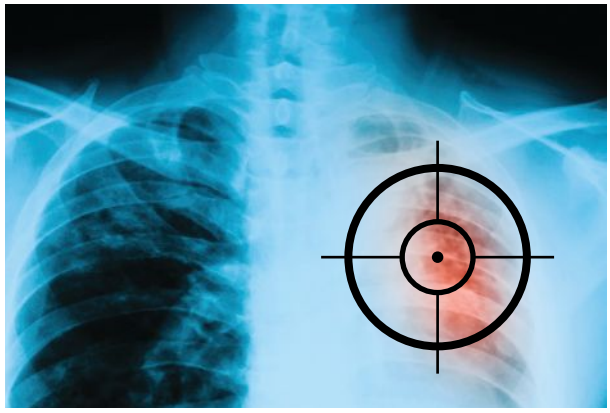
Below-normal levels of vitamin D in the blood are likely tied to an increased risk of early signs of interstitial lung disease (ILD), according to a study conducted by researchers from Johns Hopkins University School of Medicine who reviewed medical information on more than 6,000 adults followed over a 10-year period. Those who were vitamin D-deficient had a larger volume of bright spots in the lung suggestive of damaged lung tissue on CT scans compared to patients with adequate vitamin D levels. These differences were seen after adjusting for age and lifestyle risk factors for lung disease such as current smoking status, pack-years of smoking, physical inactivity, and obesity. The study was published in a recent edition of the *Journal of Nutrition*. ■

Phage Therapy Is a Promising New Treatment for Lung Infections

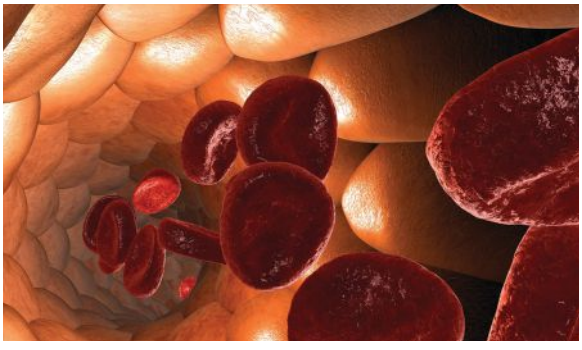
Phage therapy is being touted for its ability to treat infections without harming good bacteria or contributing to multi-drug resistance. The problem is, it's hard to purify therapeutic bacteriophages and challenging to deliver them to the site of an infection, particularly when that infection is located in the lungs.

Researchers from the Georgia Institute of Technology and Children's Healthcare of Atlanta have come up with a new way to deliver this therapy that they believe will make it a more practical choice going forward. Their technique uses dry, porous microparticles coated with phages. In animal testing, the polymer particles successfully treated pneumonia in infected mice and dramatically reduced bacterial levels in an animal model of cystic fibrosis. The technique might one day allow delivery of the dry-powder phage using a device similar to a common inhaler.

"We set out to engineer a biomaterial carrier that would keep the phage active while delivering them deep into the lungs in a uniform fashion," noted study author Andrés García, from Georgia Tech. "This is a key step in moving this potential therapy forward." The study appeared in a recent edition of *Nature Biomedical Engineering*. ■



Fantastic Voyage 2.0



In Isaac Asimov's iconic 1966 science fiction novel, Fantastic Voyage, a team of scientists is miniaturized and sent into the body of a fellow scientist to save him from a blood clot that has traveled to his brain. A present-day virologist and flu expert from the University of Wisconsin-Madison has developed a tool called FluVision that is now allowing scientists to embark on real-time virtual voyages to the site of influenza virus infections in living mice.

"It's like we can shrink and go inside the body," says Yoshihiro Kawaoka, DVM, PhD, who performed the work at the University of Tokyo, where he is also a professor. The tool was adapted from previously studied technology called two-photon excitation microscopy and used fluorescently-labeled H5N1 or H1N1 viruses to infect the mice so they could be viewed with a laser under the microscope. Among the findings:

- Blood flow in the capillaries of influenza-infected lungs slowed down after infection with either virus, though to a lesser extent with H1N1, suggesting that the viruses affect the vascular system before causing lung damage.
- Two days after exposure, the lungs of mice infected with H5N1 became "leaky" as the contents of the capillaries permeated into the alveoli. This was also associated with an increase in the number of dead cells in the lungs.
- In mice infected with H5N1, neutrophils were recruited to the lungs on the first day after exposure, becoming six times more prevalent. They doubled in the lungs of mice infected with H1N1.
- After the number of influenza-infected cells peaked on day three, neutrophil numbers dropped, but those that remained behaved differently than neutrophils in healthy mice.
- Neutrophils showed two kinds of motion: slow and rapid. In influenza-infected lungs, the neutrophils that remained after the peak day showed a decrease in rapid motion and spent more time moving slowly, as if scouting for infected cells.

Kawaoka plans to study more viruses with the tool to better understand what happens during an infection, saying, "We are seeing the mechanisms of the immune system at work. These are the things you discover and it's exciting, but now we have to figure out what's going on." The research was published in a recent edition of the *Proceedings of the National Academy of Sciences.* ■

Diabetes Drug Metformin May Reverse Lung Fibrosis

A new study out of the University of Alabama at Birmingham has found lung fibrosis can be reversed by the drug metformin. Metformin targets cell metabolism and is typically used to treat non-insulin-dependent diabetes.

In this study, the investigators focused on AMP-activated protein kinase (AMPK), an enzyme that senses the energy state in the cell and regulates metabolism. Results showed AMPK activity was lower in myofibroblast cells within fibrotic regions of human lung tissue taken from patients with idiopathic pulmonary fibrosis. Activation of AMPK in myofibroblasts using metformin or another activator called AICAR led to lower fibrotic activity and enhanced the production of new mitochondria, the organelles in cells that produce energy, in the myofibroblasts. The cells' sensitivity to apoptosis was normalized as well.

The researchers also used a mouse model of lung fibrosis to show that metformin treatment, starting three weeks after lung injury and continuing for five weeks, accelerated the resolution of well-established fibrosis. Such resolution was not apparent in AMPK-knockout mice, showing that the effect of metformin was AMPK-dependent. The study was published in a recent edition of *Nature Medicine*. ■

Strange But True…

New doc in town: A London-based artificial intelligence firm claims it has developed an app that's just as good at diagnosing the type of symptoms seen by the average family doctor as … well, the average family doctor. On a set of questions taken from the final exams given to students who tried to qualify as family doctors, the app scored 81%. The average score of family doctor students over the past five years is 72%. ■

Air pollution spurs diabetes?: U.S. researchers believe air pollution levels — even those considered safe in North America — are contributing to the rising number of diabetes cases. What's the connection? Air pollution is thought to reduce insulin production and trigger inflammation, preventing the body from converting blood glucose into energy that the body needs to maintain health. ■

The eyes have it: According to researchers from Loyola Medicine, floppy eyelids may be a sign of sleep apnea. In their study, 53% of sleep apnea patients exhibited upper eyelids that were lax and rubbery. ■

Calendar of Events

AARC & State Society Programs

September 13, 2018 – September 14, 2018
Muncie, IN
ISRC Game of Therapies
Contact: marytodd25@yahoo.com or www.isrc-in.org

September 17, 2018 – September 19, 2018
Honolulu, HI
45th Annual Hawaii Society for Respiratory Care Conference
Contact: www.hawaiircps.org

September 26, 2018
Waterbury, CT
11th Annual Fall Conference
Contact: www.ctsrc.org

September 27, 2018 – September 28, 2018
Lexington, KY
2018 Pulmonary & Cardiovascular Issues: Making the Connection
Contact: ksrcbod@gmail.com or
www.kentuckysocietyforrespiratorycare.org/

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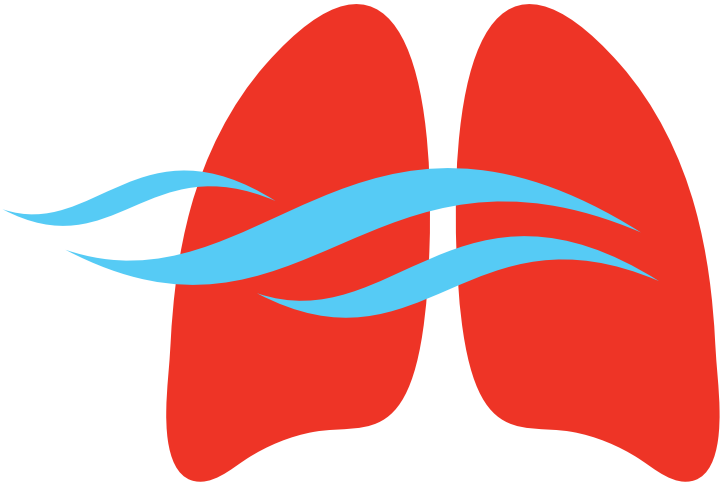

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[1] For complete specifications, including measurements, see Operator's Manual.

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