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References:

1. Frat JP, Thille AW, Mercat A, et al. High-Flow Oxygen through Nasal Cannula in Acute Hypoxemic Respiratory Failure. *The New England Journal of Medicine* 2015: DOI: 10.1056/NEJMoa1503326.
2. Dysart K, Miller TL, et al. Research in High Flow Therapy: Mechanisms of Action. *Respiratory Medicine* 2009 103, 1400 – 1405 Cited in support of HFNCT benefits not including CPAP as CPAP is off-label for Comfort Flo Humidification System.

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AARC Strategic Plan

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

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American Association for Respiratory Care

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Our Profession Requires Change: Rise Up

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

Thomas Aquinas wrote: "There is within every soul a thirst for happiness and meaning."

People make changes for two reasons: they choose to change or someone else forces them to make a change. Happiness and meaning are the two largest drivers for those who choose to make a change. People who reach a point in their life where they say "Now what?" realize that life is up to them — no other person on this planet can force someone to achieve their goals (or keep them from achieving the goals), no other human being has responsibility for someone else's final outcome. Not your parents, not your boss, not your kids, not your best friend, not your spouse, not your coworker. Only you! It is tremendously exciting for me to see people as they make this choice. To see people change their profession — not just work a job. There are few things better!

What if your boss is making you stretch your potential? Maybe you are not ready to do this. I will borrow a quote from Nathaniel Branden's *The Six Pillars of Self-Esteem*: "No one is coming." You are on your own. You can go around blaming others for your problems. You can find scapegoats to judge and make you feel better about yourself. You can find "quick fixes." You can continue with this pattern for the rest of your life if you choose, but our profession requires change. Our profession demands quality, and no one is coming to save you from this advancement. Instead, you must focus on your career and do whatever is necessary to rise up. Realize that you are responsible for your career.

Rising up and making a change is not easy — it requires effort. Before making a change, you must accept that fact and work from the model of reality. If you think things will fall into your lap effortlessly, then any effort or action you take will feel so hard and so difficult that you will quickly stop trying. Or if you try and fail, you'll just quit instead of trying again.

So, check your reality. Are you looking for an easy answer or a magic pill? Or will you work hard and listen to advice that can help make the process easier and allow you to work smarter? I challenge you to make a change in your life: If you don't have your bachelor's degree, go after it. If you have your bachelor's degree, go for your master's degree or another terminal degree. If you are a CRT, go for your RRT. If you have your RRT, go for your RRT-ACCS or RRT-NPS. Take a step outside your comfort zone.

"We cannot become what we want to be by remaining what we are." *Max DePree* ■

about the author...

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

General Counsel

The R Word

by Anthony L. DeWitt, JD, RRT, FAARC

When I was a young therapist sprinting down the hallways, I was pretty sure that, in spite of the daily presentation of evidence directly to the contrary, I would live forever. However, as time, career changes, and aching bones set in, I learned, much to my chagrin, not only that I am mortal, but that there comes a time when everyone hangs up their stethoscope and rides off to retirement.

If you're 20 years old and you're reading this, your initial reaction will be, "I'll worry about that later." That's a very bad reaction. If you are 30 years or older and you have that reaction, you likely do not understand real life or finance. The time to save for retirement is when you get your first paycheck. Delaying retirement planning hurts you and everyone you love.

Many of us expect to have Social Security benefits for retirement income. That may or may not be wise. Social Security's trust fund is not sustainable. The time will come before too long when there are more retirees drawing from Social Security than there are healthy people to pay into the system. This means that the estimated monthly income shown on Social Security statements might actually be a whole lot less.

Numerous vehicles exist for the investment of income into tax-deferred plans that allow you to do two very important things: shield a certain amount of income from taxation in the year you earn it, and invest it for the purpose of retirement. Whether these are called 401(k) plans, Roth IRAs, or regular IRAs, a tax adviser can help you pick a suitable plan so that the money you invest now will actually be there for you when you retire.

If you are over the age of 50 and you are approaching retirement, it is even more important to plan now for the changes that accompany retirement. Everything about health insurance changes at age 65. Income levels drop. And if you draw on Social Security before you reach full retirement age, the amount of money you can earn from even part-time employment is severely limited.

For example, as originally envisioned, Social Security retirement age was 65. In 1983, cognizant of the fact that the trust fund was diminishing, Congress amended the Social Security Act to phase in a change from 65 to 67 over the next 22 years. I was born in 1955. While I can still opt to draw Social Security at age 62, my full retirement age — the age that the Social Security Administration recognizes — is 66 and 2 months. I will not receive the full amount of Social Security benefits unless I delay retirement until that date. Thus, if I were to retire early at age 63 and draw Social Security, under the current rules there is a limit of $17,040 on the amount of money I could earn without penalty. The penalty is $1 for every $2 earned. So, if I earned $10,000 over the limit (or $27,040) in the calendar year, the government would take back $5,000 for Social Security wages. Once a person reaches full retirement age, however, they can work as much as they like without any penalty. If all this sounds confusing, it is. That's why retirement requires careful planning with professionals.

One government benefit that every citizen receives at age 65 is Medicare. You can enroll in Medicare during the seven-month period that begins three months before the

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.

month you turn 65. So, if you turn 65 on July 1, 2018, you could apply as early as April 1, and as late as October 1. Applying early means that coverage could start as early as the month of your 65th birthday.

But here is something you may not know: If you don't sign up for Medicare during this initial seven-month enrollment period, you could be charged higher premiums for the rest of your life. There is very little information about this penalty on the Social Security website, and for persons who wish to retire at age 66 and delay their Social Security benefits, signing up for Medicare on time at age 65 is very important.

As every therapist knows, health problems tend to get worse with advancing age. Because of advances in medical care, life can often be extended if persons with chronic disease states are placed in skilled nursing facilities. But skilled nursing is costly, and Medicare pays for only 120 days of it. After that, no matter what the diagnosis, the patient becomes responsible for their own custodial care. Long-term care insurance is useful to help defray these costs, but even insurance may not fully subsidize long-term care.

If one spouse gets sick and needs institutional care, the federal Medicaid program kicks in. But it comes with a "spend down" rule that requires a person to spend their own assets before looking to Medicaid. While there are some protections for the non-dependent spouse, this still leaves the spouse without a home if the asset is in the other spouse's name. Again, this is a big reason for planning ahead.

Inter-vivos trusts are devices that allow a husband and wife to place "in trust" for their care and benefit all of their valuable worldly possessions. By placing the assets (cars, homes, jewelry, stocks and bonds, etc.) into a trust and designating it as a "spendthrift" trust, no creditor (even Medicaid) can get to those assets. But there is a catch: To avoid the penalty on Medicaid, the trust has to have been in existence for a period of five years before the need for skilled care. In other words, the time to think about a trust is before a debilitating stroke or other injury.

If a parent or loved one has a disease condition like vascular disease, diabetes, or other long-term chronic conditions, it is wise to place assets into a trust as soon as possible. It is not always wise, however, to go to a bank or trust company for this service, even if the bank claims that their lawyers draft the documents. Banks and other investment firms sometimes have a different financial interest in your assets that outweighs their interest in protecting you. Thus, the best person to create such a trust is a lawyer hired by you, loyal to you, and who is an expert on trusts and estates. This is one area where you can't do it yourself. You need an attorney to draw up and administer the documentation. Properly done, all assets, including investment income, goes into the trust, and all bills are paid out of the trust. Because deeds and other contractual documents need to be drafted to accomplish this, it is unwise to rely on software or "trust providers" to perform this service. They may simply sell you a piece of paper that is worthless if you do not immediately and properly transfer your assets.

For more information on trusts and estate planning, the American Bar Association has some excellent resources online at https://www.americanbar.org/groups/real_property_trust_estate/resources/estate_planning.html. ■

Quick Action Can Save a Life

by Brook Goodrich, RRT

I was at the gym, participating in a fitness training class. It was a switch workout day, so after starting out on the treadmill for twelve minutes, we went straight to the rowing machines. I sat down on the rowing machine and strapped my feet in, as did the guy on my right. We listened to the trainer's instructions, and then I pushed "start." That's when the guy next to me fell backwards. He appeared to be seizing and was foaming from the mouth.

Get the AED!

I hurriedly unstrapped my feet and helped pick his head up. I yelled out for the trainer to help me and said he was seizing. She then called for more help so we could get him off the rowing machine and set him on the floor. We turned him on his side, and foaming secretion poured out of his mouth. I opened his mouth and saw that his tongue was completely obstructing his airway. I turned him back over and did the "head tilt, chin lift" maneuver. I then felt his neck for a pulse. There was none.

I immediately started compressions and yelled for someone to get the AED and to call 911. I continued to do compressions while they were bringing the AED. I told them to open it up and turn it on. I asked if there was a pocket mask in it. There was, so I instructed the person beside me to breathe two times for the man after I counted to 30 with compressions. We continued that while they got the pads and gave them to me.

I then placed the pads on him and waited while it analyzed. The AED said, "Shock advised," so I told them to push the button to shock, and we delivered the shock. I continued with compressions while they assisted with breaths. I was getting tired, so I asked my helpers to do compressions while I did the breaths. I instructed them to count to 30 compressions and then to pause so I could deliver two breaths before they continued compressions.

We repeated this routine until the AED said to analyze rhythm again. It advised another shock, which was delivered. We continued CPR until the police arrived and helped with compressions. We delivered another shock and once again resumed CPR. After analyzing a third time, the AED said "No shock advised" — I felt his neck and we had a pulse! The man started to breathe on his own at this point. Paramedics arrived about twelve and a half minutes after the call. They hooked him up and gave him a few breaths with oxygen, and he became responsive and knew his name. He was transported to the nearest hospital.

Emotional experience

The whole experience was very emotional for me, the trainers, and all the members in the class that day. Gym members and staff were in the front lobby, crying and emotionally upset, waiting to see the outcome. After I left, I became tearful as I replayed the events in my mind. The whole thing felt surreal. I know I deal with this kind of thing at work, but this was completely different. At work I'm in a controlled environment and have monitors, a team that knows what to do, and everything I need. This experience was one I will never forget. I am so thankful for all the help from everyone around me as they listened to what I told them to do in this very stressful situation.

The next day I went back to the gym and was running on the treadmill. I saw the paramedics from yesterday come in. I figured they might have left something behind from the day before. A member of the gym staff came

about the author...

AARC member Brook Goodrich, RRT, is a respiratory therapist at Timpanogos Regional Hospital in Orem, UT.

over and said the paramedics would like to talk to me. They thanked me for saving the man's life; they told me that they didn't do anything for him, and they wanted me to know that. They said that it took them a long time to get to us because they were out past the station.

They also said that he would not have made it if I hadn't been there. They said they talked with other paramedics when they got back to the station after the call, and everyone said, "Someone knew what they were doing." They thanked me again for what I did for him and gave me a hug.

Tears of joy

When I was leaving that day, two of the man's friends who had come to get his car came in to thank the staff. The staff told them who I was, and they thanked me with so much appreciation. They got the man on the phone, and I was able to speak with him.

I'll never forget what he said. He told me he had worked at the University of Utah in the burn clinic for years, and he knew that I not only saved his life and his heart. He said, "You saved my cognitive brain function as well."

Goodrich was working out at her gym when exercise took a backseat to her lifesaving skills.

Tears streamed down my face as he thanked me over and over. His friends took my picture with the staff so they could show him who I was. I will never forget this day or the events that took place, but most of all, I am so thankful that I was able to help him and use what I have learned as a respiratory therapist to save a life. ■

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.

The first and only nebulized LAMA for COPD

including chronic bronchitis and/or emphysema

nebulization

IS GOING PLACES

The first and only nebulized LAMA with a portable design

Twice-daily dosing, morning and evening[1]

2-3 minute, virtually silent administration with tidal breathing[1,2*†]

Audiovisual feedback mechanisms[3‡]

Portable, battery-operated design[3§]

Visit **sunovionprofile.com/lonhala-magnair** to learn more

*Improper cleaning and maintenance may increase administration time.
†Patients breathe naturally through the mouthpiece when taking treatment.
‡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.

Lonhala™ Magnair™
(glycopyrrolate) Inhalation Solution
25 mcg/1 mL

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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Manufactured for:
Sunovion Respiratory Development Inc.,
a wholly-owned subsidiary of Sunovion Pharmaceuticals Inc.,
Marlborough, MA 01752 USA

To report suspected adverse reactions, call 1-877-737-7226.
For customer service, call 1-888-394-7377.

Proud To Be Part of This Elite Group

by Debbie Bunch

Valley Hospital in Ridgewood, NJ, is a 451-bed facility serving more than 440,000 people living in 32 towns in the Bergen County area of New Jersey. The hospital prides itself on its medical and technical excellence and has been recognized for service excellence by the J.D. Power and Associates Distinguished Hospital Program. It was the first hospital in the area to be designated as a Magnet Facility for nursing excellence by the American Nurses Credentialing Center, the nursing profession's highest honor.

> Valley Hospital RTs are dedicated to delivering the highest quality of respiratory care possible

Herve Mondestin, MS, RRT, and his colleagues at Valley were already striving to make their respiratory care department a model department in their health system when they learned about the AARC's new Apex Recognition Award, the highest honor a hospital can earn in the respiratory care profession. It was just what they needed to validate all the great things they were doing.

"Apex took to us to the next level on innovating therapy and brings pride to the entire Valley Health System and our RT department," says the department manager.

Closing the gaps

Meeting the Apex requirements gave the department a chance to identify and close gaps. Aligning protocols with departmental goals and objectives, along with making sure staff files reflected their status on educational attainment, were critical to success.

"I had to round with my shared governance team to review the status of the policies and procedures we have in place, along with reviewing all of our therapist-driven protocols," says Mondestin. He encouraged staff members who were still working on their bachelor's degrees to finish them and reminded them about the tuition reimbursement program in place at Valley Health to make the process more cost effective for them.

Earning Apex recognition from the AARC boosted the morale for each of the 60+ members of the RT department, and it has also garnered media coverage for the health system. In a press release issued by the hospital, Audrey Meyers, president and CEO of the Valley Hospital and Valley Health System, was quoted as saying, "Valley is proud to be among a small, elite group of hospitals that have been recognized with the Apex Recognition Award. The Apex Recognition Award reflects the high-quality care our respiratory therapists and team members provide."

RTs are touting their Apex Award out in the community, too, through the smoking cessation and COPD screening services they offer. These outreach

The Apex Recognition Award

The AARC developed the Apex Recognition Award to acknowledge the significant contributions of respiratory therapists and highlight best practices in respiratory care that are aligned with evidence-based medicine. The program can also help consumers choose health care facilities that promote patient safety by providing access to respiratory therapists to deliver their care.

Apex recognition is available for acute care hospitals, long-term care facilities, and home medical equipment companies. A complete set of resources is available on the AARC website for facilities that would like to apply for the recognition. Visit http://www.aarc.org/resources/programs-projects/apex-recognition-award/ to learn more about this award program from the AARC that recognizes excellence in respiratory care. Applications for the 2019–2020 Apex Recognition Award will open in October 2018. ■

programs give therapists the chance to extend their expertise to people in need who might not come in contact with RTs in the acute care setting.

A great start

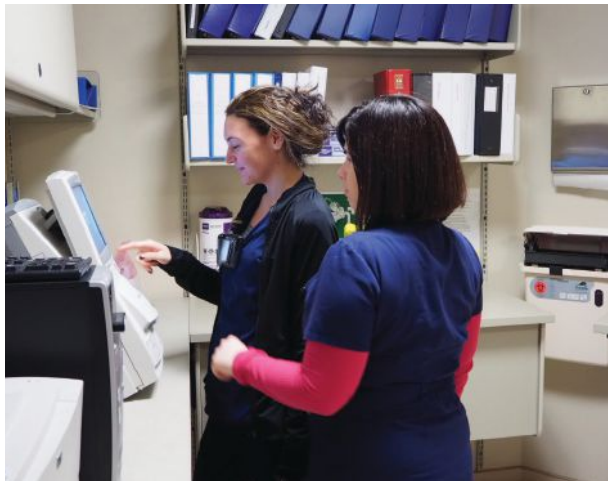
Herve Mondestin says earning the Apex Award from the AARC is helping his department "promote the respiratory care profession to the highest level that is possible." He sees great potential in respiratory care and is determined to do what he can to make sure that potential is realized. Apex recognition is certainly a great start. ■

Herve Mondestin, MS, RRT, believes Apex recognition is paying off for his department.

Apex recognition is helping RT staff members at Valley Hospital move the profession forward.

Herve Mondestin, MS, RRT, left, Rowan Pragdat, MS, RRT, center, and Mary Lucas, BSRC, RRT, display some of their exercise equipment.

Valley Hospital RTs (from left to right) Joseph Endanattu, RRT, Mathew Thalathara, BA, RRT, and Johnson Thomas, RRT, practice their skills on one of the facility's training mannequins.



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For patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema

POWER

of a LABA/LAMA combination

FULL

audiovisual feedback each time a dose is inhaled

INDICATION

UTIBRON™ NEOHALER® (indacaterol and glycopyrrolate) is a combination of indacaterol and glycopyrrolate indicated for the long-term, maintenance treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema.

Important limitations: UTIBRON NEOHALER is not indicated to treat acute deteriorations of COPD and is not indicated to treat asthma.

IMPORTANT SAFETY INFORMATION

WARNING: ASTHMA-RELATED DEATH

Long-acting beta$_2$-adrenergic agonists (LABAs) increase the risk of asthma-related death. Data from a large placebo-controlled US study that compared the safety of another LABA (salmeterol) or placebo added to usual asthma therapy showed an increase in asthma-related deaths in patients receiving salmeterol. This finding with salmeterol is considered a class effect of all LABAs, including indacaterol, one of the active ingredients in UTIBRON NEOHALER.

The safety and efficacy of UTIBRON NEOHALER in patients with asthma have not been established. UTIBRON NEOHALER is not indicated for the treatment of asthma.

All LABAs, including indacaterol, are contraindicated in patients with asthma without the use of a long-term asthma-control medication; UTIBRON NEOHALER is also contraindicated in patients with a history of hypersensitivity to indacaterol, glycopyrrolate, or to any of the ingredients.

UTIBRON NEOHALER 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.

sunovion

Powerful bronchodilation with UTIBRON™ NEOHALER® (indacaterol/glycopyrrolate)

- **>230 mL improvement in FEV_1 $AUC_{0\text{-}12hr}$ vs placebo at Week 12 in two trials (primary end point)**[1]
  - 262 mL improvement in FEV_1 $AUC_{0\text{-}12hr}$ vs placebo at Week 12 in Trial 1
  - 231 mL improvement in FEV_1 $AUC_{0\text{-}12hr}$ vs placebo at Week 12 in Trial 2
- **Reduction in rescue medication use all day and night with twice-daily UTIBRON NEOHALER vs placebo (secondary end point)**[1,2]
  - UTIBRON NEOHALER is not a rescue inhaler and is not indicated to treat episodes of acute bronchospasm
- **Whirring noise during inhalation confirms correct placement of the capsule in the chamber**[1]
- **Clear capsule design allows patients to visualize any medication left in the capsule and inhale all of the remaining dose**[1]
- **UTIBRON capsules are for oral inhalation only and should not be swallowed**[1]

Sunovion Answers is there for your patients with support and answers. Call 1-844-276-8262 for more information.

Visit www.UTIBRON.com to learn more.

AUC, area under the curve; FEV_1, forced expiratory volume in 1 second; LABA, long-acting $beta_2$-adrenergic agonist; LAMA, long-acting muscarinic antagonist.

UTIBRON NEOHALER should not be used more often, at higher doses than recommended, or in conjunction with other medicines containing LABAs as an overdose may result. Patients who have been taking inhaled short-acting $beta_2$-agonists on a regular basis should be instructed to discontinue their regular use and to use them only for symptomatic relief of acute respiratory symptoms. Clinically significant cardiovascular effects and fatalities have been reported in association with excessive use of inhaled sympathomimetic drugs. Patients using UTIBRON NEOHALER should not use another medicine containing a LABA for any reason.

Immediate hypersensitivity reactions have been reported with UTIBRON NEOHALER. If signs occur, discontinue immediately and institute alternative therapy. UTIBRON NEOHALER should be used with caution in patients with severe hypersensitivity to milk proteins.

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

STUDY DESIGN

The efficacy and safety of UTIBRON NEOHALER was established in two 12-week pivotal trials and one 52-week safety trial.[1,2]

For additional information, please see the Brief Summary of Prescribing Information, including BOXED WARNING, on the following pages.

Please visit www.SunovionProfile.com/UTIBRON for full Prescribing Information and Medication Guide.

References: 1. UTIBRON NEOHALER [prescribing information]. 2017. **2.** Data on file. FLIGHT2 and FLIGHT1 clinical study reports. Sunovion Pharmaceuticals Inc.

utibron™ neohaler®

(indacaterol/glycopyrrolate) inhalation powder 27.5 mcg/15.6 mcg

utibron™ neohaler®

(indacaterol/glycopyrrolate) inhalation powder

BRIEF SUMMARY OF FULL PRESCRIBING INFORMATION

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

INDICATIONS AND USAGE

UTIBRON™ NEOHALER® is a combination of indacaterol and glycopyrrolate indicated for the long-term, maintenance treatment of airflow obstruction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema.

Important Limitations of Use: UTIBRON NEOHALER is NOT indicated for the relief of acute bronchospasm or for the treatment of asthma.

CONTRAINDICATIONS

UTIBRON NEOHALER is contraindicated in patients with asthma without use of a long-term asthma control medication.

UTIBRON NEOHALER is contraindicated in patients who have demonstrated hypersensitivity to indacaterol, glycopyrrolate, or to any of the ingredients.

WARNINGS AND PRECAUTIONS

WARNING: ASTHMA-RELATED DEATH

Long-acting beta$_2$-adrenergic agonists (LABAs) increase the risk of asthma-related death. Data from a large, placebo-controlled U.S. study that compared the safety of another LABA (salmeterol) or placebo added to usual asthma therapy showed an increase in asthma-related deaths in patients receiving salmeterol. This finding with salmeterol is considered a class effect of all LABAs, including indacaterol, one of the active ingredients in UTIBRON NEOHALER.

The safety and efficacy of UTIBRON NEOHALER in patients with asthma have not been established. UTIBRON NEOHALER is not indicated for the treatment of asthma.

Data from a large, placebo-controlled U.S. study in asthma patients showed that LABAs may increase the risk of asthma-related death. Data are not available to determine whether the rate of death in patients with COPD is increased by LABAs.

A 28-week, placebo-controlled U.S. study comparing the safety of another LABA (salmeterol) with placebo, each added to usual asthma therapy, showed an increase in asthma-related deaths in patients receiving salmeterol (13/13,176 in patients treated with salmeterol versus 3/13,179 in patients treated with placebo; RR 4.37, 95% CI 1.25, 15.34). The increased risk of asthma-related death is considered a class effect of the LABAs, including indacaterol, one of the ingredients in UTIBRON NEOHALER.

No study adequate to determine whether the rate of asthma-related death is increased in patients treated with UTIBRON NEOHALER has been conducted. The safety and efficacy of UTIBRON NEOHALER in patients with asthma have not been established. UTIBRON NEOHALER is not indicated for the treatment of asthma.

Deterioration of Disease and Acute Episodes

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

UTIBRON NEOHALER should not be used for the relief of acute symptoms, i.e., as rescue therapy for the treatment of acute episodes of bronchospasm. UTIBRON NEOHALER 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.

When beginning UTIBRON NEOHALER, patients who have been taking oral or inhaled, short-acting beta$_2$-agonists on a regular basis (e.g., 4 times a day) should be instructed to discontinue the regular use of these drugs and use them only for symptomatic relief of acute respiratory symptoms.

When prescribing UTIBRON NEOHALER, the healthcare provider should also prescribe an inhaled, short-acting beta$_2$-agonist and instruct the patient on how it should be used. Increasing inhaled beta$_2$-agonist use is a signal of deteriorating disease for which prompt medical attention is indicated.

COPD may deteriorate acutely over a period of hours or chronically over several days or longer. If UTIBRON NEOHALER no longer controls the symptoms of bronchoconstriction; the patient's inhaled, short-acting beta$_2$-agonist becomes less effective; or the patient needs more inhalation of 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 UTIBRON NEOHALER beyond the recommended dose is not appropriate in this situation.

Excessive Use of UTIBRON NEOHALER and Use with Other Long-Acting Beta$_2$-Adrenergic Agonists

As with other inhaled drugs containing beta$_2$-adrenergics, UTIBRON NEOHALER should not be used more often than recommended, at higher doses than recommended, or in conjunction with other medications containing LABAs, as an overdose may result. Clinically significant cardiovascular effects and fatalities have been reported in association with excessive use of inhaled sympathomimetic drugs. Patients using UTIBRON NEOHALER should not use another medicine containing a LABA for any reason.

Paradoxical Bronchospasm

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

Immediate Hypersensitivity Reactions

Immediate hypersensitivity reactions have been reported after administration of indacaterol or glycopyrrolate, the components of UTIBRON NEOHALER. If signs suggesting allergic reactions occur, in particular, angioedema (including difficulties in breathing or swallowing, swelling of tongue, lips and face), urticaria, or skin rash, UTIBRON NEOHALER should be discontinued immediately and alternative therapy instituted. UTIBRON NEOHALER should be used with caution in patients with severe hypersensitivity to milk proteins.

Cardiovascular Effects

Indacaterol, like other beta$_2$-agonists, can produce a clinically significant cardiovascular effect in some patients as measured by increases in pulse rate, systolic or diastolic blood pressure, or symptoms. If such effects occur, UTIBRON NEOHALER may need to be discontinued. In addition, beta-agonists have been reported to produce ECG changes, such as flattening of the T-wave, prolongation of the QTc interval, and ST segment depression, although the clinical significance of these findings is unknown.

Therefore, UTIBRON NEOHALER should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension.

Coexisting Conditions

UTIBRON NEOHALER, like all medicines containing sympathomimetic amines, should be used with caution in patients with convulsive disorders or thyrotoxicosis, and in patients who are unusually responsive to sympathomimetic amines.

Worsening of Narrow-Angle Glaucoma

UTIBRON NEOHALER 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

UTIBRON NEOHALER 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.

Hypokalemia and Hyperglycemia

Beta$_2$-adrenergic agonists may produce significant hypokalemia in some patients, which has the potential to produce adverse cardiovascular effects. The decrease in serum potassium is usually transient, not requiring supplementation. Inhalation of high doses of beta$_2$-adrenergic agonists may produce increases in plasma glucose.

In patients with severe COPD, hypokalemia may be potentiated by hypoxia and concomitant treatment, which may increase the susceptibility for cardiac arrhythmias.

In 2 clinical trials of 12-weeks duration evaluating UTIBRON NEOHALER in subjects with COPD, there was no evidence of a treatment effect on serum glucose or potassium.

ADVERSE REACTIONS

Clinical Trials Experience

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

The UTIBRON NEOHALER safety database included 2654 subjects with COPD in two 12-week lung function trials and one 52-week long-term safety study. A total of 712 subjects received treatment with UTIBRON NEOHALER 27.5 mcg/15.6 mcg twice daily (BID). The safety data described below are based on the two 12-week trials and the one 52-week trial.

12-Week Trials

The incidence of adverse reactions associated with UTIBRON NEOHALER in Table 1 is based on two 12-week, placebo-controlled trials (Trials 1 and 2; N=1,001 and N=1,042 respectively). Of the 2040 subjects, 63% were male and 91% were Caucasian. They had a mean age of 63 years and an average smoking history of 47 pack-years, with 52% identified as current smokers. At screening, the mean post-bronchodilator percent predicted forced expiratory volume in 1 second (FEV_1) was 55% (range: 29% to 79%), the mean post-bronchodilator FEV_1/forced vital capacity (FVC) ratio was 50% (range: 19% to 71%), and the mean percent reversibility was 23% (range: 0% to 144%).

The proportion of patients who discontinued treatment due to adverse reactions was 2.95% for the UTIBRON NEOHALER treated patients and 4.13% for placebo-treated patients.

Table 1. Adverse reactions with UTIBRON NEOHALER (greater than or equal to 1% incidence and higher than placebo) in COPD patients

Adverse Reaction	UTIBRON NEOHALER 27.5/15.6 mcg BID (N=508) n (%)	Indacaterol 27.5 mcg BID (N=511) n (%)	Glycopyrrolate 15.6 mcg BID (N=513) n (%)	Placebo (N=508) n (%)
Naso-pharyngitis	21 (4.1)	13 (2.5)	12 (2.3)	9 (1.8)
Hypertension	10 (2.0)	5 (1.0)	3 (0.6)	7 (1.4)
Back pain	9 (1.8)	7 (1.4)	2 (0.4)	3 (0.6)
Oropharyngeal pain	8 (1.6)	4 (0.8)	8 (1.6)	6 (1.2)

Other adverse reactions occurring more frequently with UTIBRON NEOHALER than with placebo, but with an incidence of less than 1% include dyspepsia, gastroenteritis, chest pain, fatigue, peripheral edema, rash/pruritus, insomnia, dizziness, bladder obstruction/urinary retention, atrial fibrillation, palpitations, tachycardia.

52-Week Trial

In a long-term safety trial, 614 subjects were treated for up to 52 weeks with indacaterol/glycopyrrolate 27.5 mcg/15.6 mcg twice-daily, indacaterol/glycopyrrolate 27.5/31.2 mcg twice-daily or indacaterol 75 mcg once-daily. The demographic and baseline characteristics of the long-term safety trial were similar to those of the placebo-controlled efficacy trials described above. The adverse reactions reported in the long-term safety trial were consistent with those observed in the placebo-controlled trials of 12 weeks.
Additional adverse reactions that occurred with a frequency greater than or equal to 2% in the group receiving indacaterol/glycopyrrolate 27.5 mcg/15.6 mcg twice-daily that exceeded the frequency of indacaterol 75 mcg once-daily in this trial were upper and lower respiratory tract infection, pneumonia, diarrhea, headache, gastroesophageal reflux disease, hyperglycemia, rhinitis.

Postmarketing Experience
The following additional adverse reactions of angioedema and dysphonia have been identified during worldwide post-approval use of indacaterol/glycopyrrolate at higher than the recommended dose. Because this reaction is reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate the frequency or establish a causal relationship to drug exposure.

DRUG INTERACTIONS

Adrenergic Drugs
If additional adrenergic drugs are to be administered by any route, they should be used with caution because the sympathetic effects of indacaterol, a component of UTIBRON NEOHALER, may be potentiated.

Xanthine Derivatives, Steroids, or Diuretics
Concomitant treatment with xanthine derivatives, steroids, or diuretics may potentiate any hypokalemic effect of $beta_2$-adrenergic agonists such as indacaterol, a component of UTIBRON NEOHALER.

Non-Potassium-Sparing Diuretics
The electrocardiographic (ECG) changes and/or hypokalemia that may result from the administration of non-potassium-sparing diuretics (such as loop or thiazide diuretics) can be acutely worsened by beta-agonists, such as indacaterol, a component of UTIBRON NEOHALER, especially when the recommended dose of the beta-agonist is exceeded. Although the clinical relevance of these effects is not known, caution is advised in the coadministration of UTIBRON NEOHALER with non-potassium-sparing diuretics.

Monoamine Oxidase Inhibitors, Tricyclic Antidepressants, QTc-Prolonging Drugs
Indacaterol, one of the components of UTIBRON NEOHALER, as with other $beta_2$-agonists, should be administered with extreme caution to patients being treated with monoamine oxidase inhibitors, tricyclic antidepressants, or other drugs known to prolong the QTc interval because the action of adrenergic agonists on the cardiovascular system may be potentiated by these agents. Drugs that are known to prolong the QTc interval may have an increased risk of ventricular arrhythmias.

Beta-Blockers
Beta-adrenergic receptor antagonists (beta-blockers) and UTIBRON NEOHALER may interfere with the effect of each other when administered concurrently. Beta-blockers not only block the therapeutic effects of beta-agonists, but may produce severe bronchospasm in COPD patients. Therefore, patients with COPD should not normally be treated with beta-blockers. However, under certain circumstances, e.g., as prophylaxis after myocardial infarction, there may be no acceptable alternatives to the use of beta-blockers in patients with COPD. In this setting, cardioselective beta-blockers could be considered, although they should be administered with caution.

Anticholinergics
There is potential for an additive interaction with concomitantly used anticholinergic medicines. Therefore, avoid coadministration of UTIBRON NEOHALER with other anticholinergic-containing drugs as this may lead to an increase in anticholinergic adverse effects.

Inhibitors of Cytochrome P450 3A4 and P-gp Efflux Transporter
Drug interaction studies with indacaterol, a component of UTIBRON NEOHALER, were carried out using potent and specific inhibitors of CYP3A4 and P-gp (i.e., ketoconazole, erythromycin, verapamil, and ritonavir). The data suggest that systemic clearance of indacaterol is influenced by modulation of both P-gp and CYP3A4 activities and that the 2-fold area under the curve (AUC) increase caused by the strong dual inhibitor ketoconazole reflects the impact of maximal combined inhibition. Indacaterol was evaluated in clinical trials for up to 1 year at doses up to 600 mcg. Inhibition of the key contributors of indacaterol clearance, CYP3A4 and P-gp, has no impact on safety of therapeutic doses of indacaterol. Therefore, no dose adjustment is warranted at the recommended 27.5/15.6 mcg twice-daily dose for UTIBRON NEOHALER when administered concomitantly with inhibitors of CYP3A4 and P-gp.

USE IN SPECIFIC POPULATIONS

Pregnancy
Teratogenic Effects: Pregnancy Category C
There are no adequate and well-controlled studies with UTIBRON NEOHALER or its individual components, indacaterol and glycopyrrolate, in pregnant women. Animal reproduction studies were conducted with individual components, indacaterol and glycopyrrolate. Because animal reproduction studies are not always predictive of human response, UTIBRON NEOHALER should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Women should be advised to contact their physician if they become pregnant while taking UTIBRON NEOHALER.

Indacaterol: Indacaterol was not teratogenic in Wistar rats and New Zealand rabbits at approximately 340 and 770 times, respectively, the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 1 mg/kg/day in rats and rabbits).

Glycopyrrolate: Glycopyrrolate was not teratogenic in Wistar rats or New Zealand White rabbits at approximately 1400 and 530 times, respectively, the MRHD in adults (on an AUC basis at maternal inhaled doses up to 3.83 mg/kg/day in rats and up to 4.4 mg/kg/day in rabbits).

Non-teratogenic Effects:
Indacaterol: There were no effects on perinatal and postnatal developments in rats at approximately 110 times the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 0.3 mg/kg/day).

Glycopyrrolate: There were no effects on perinatal and postnatal developments in rats at approximately 1100 times the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 1.88 mg/kg/day).

Labor and Delivery
There are no adequate and well-controlled human trials that have investigated the effects of UTIBRON NEOHALER during labor and delivery. Because beta-agonists may potentially interfere with uterine contractility, UTIBRON NEOHALER should be used during labor only if the potential benefit justifies the potential risk.

In human parturients undergoing Caesarean section, 86 minutes after a single intramuscular injection of 0.006 mg/kg glycopyrrolate, umbilical plasma concentrations were low.

Nursing Mothers
UTIBRON NEOHALER: It is not known whether UTIBRON NEOHALER is excreted in human breast milk. Because many drugs are excreted in human milk, caution should be exercised when UTIBRON NEOHALER is administered to a nursing woman. Since there are no data from well-controlled human studies on the use of UTIBRON NEOHALER by nursing mothers, based on the data for the individual components, a decision should be made whether to discontinue nursing or to discontinue UTIBRON NEOHALER, taking into account the importance of UTIBRON NEOHALER to the mother.

Indacaterol: It is not known whether indacaterol is excreted in human breast milk. Indacaterol (including its metabolites) have been detected in the milk of lactating rats.

Glycopyrrolate: It is not known whether glycopyrrolate is excreted in human breast milk. Glycopyrrolate (including its metabolites) have been detected in the milk of lactating rats and reached up to 10-fold higher concentrations in the milk than in the blood of the dam.

Pediatric Use
UTIBRON NEOHALER is not indicated for use in children. The safety and efficacy of UTIBRON NEOHALER in pediatric patients have not been established.

Geriatric Use
Based on available data, no adjustment of UTIBRON NEOHALER dosage in geriatric patients is warranted. UTIBRON NEOHALER 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 UTIBRON NEOHALER, 45% were aged 65 and older, while 11% 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
Based on the pharmacokinetic characteristics of its monotherapy components, UTIBRON NEOHALER can be used at the recommended dose in patients with mild to moderate renal impairment. In patients with severe renal impairment (estimated GFR less than 30 mL/min/1.73 m^2) or end-stage renal disease requiring dialysis, UTIBRON NEOHALER should be used if the expected benefit outweighs the potential risk since the systemic exposure to glycopyrrolate may be increased in this population.

Hepatic Impairment
Based on the pharmacokinetic characteristics of its monotherapy components, UTIBRON NEOHALER can be used at the recommended dose in patients with mild to moderate hepatic impairment. Studies in subjects with severe hepatic impairment have not been performed.

OVERDOSAGE
In COPD patients, doses of up to 600/124.8 mcg UTIBRON NEOHALER were inhaled over 2 weeks and there were no relevant effects on heart rate, QTc interval, blood glucose or serum potassium. There was an increase in ventricular ectopies after 14 days of dosing with 300/124.8 mcg and 600/124.8 mcg UTIBRON NEOHALER, but low prevalence and small patient numbers (N=49 and N=51 for 600/124.8 mcg and 300/124.8 mcg UTIBRON NEOHALER, respectively) precluded accurate analysis. In a total of four patients, non-sustained ventricular tachycardia was recorded, with the longest episode recorded being 9 beats (4 seconds).

UTIBRON NEOHALER contains both indacaterol and glycopyrrolate; therefore, the risks associated with overdosage for the individual components described below apply to UTIBRON NEOHALER. Treatment of overdosage consists of discontinuation of UTIBRON NEOHALER together with institution of appropriate symptomatic and/or supportive therapy. The judicious use of a cardioselective beta-receptor blocker may be considered, bearing in mind that such medicine can produce bronchospasm. Cardiac monitoring is recommended in cases of overdosage.

Indacaterol
The potential signs and symptoms associated with overdosage of indacaterol are those of excessive beta-adrenergic stimulation and occurrence or exaggeration of any of the signs and symptoms, e.g., angina, hypertension or hypotension, tachycardia, with rates up to 200 bpm, arrhythmias, nervousness, headache, tremor, dry mouth, palpitation, muscle cramps, nausea, vomiting, drowsiness, dizziness, fatigue, malaise, hypokalemia, hyperglycemia, metabolic acidosis and insomnia. As with all inhaled sympathomimetic medications, cardiac arrest and even death may be associated with an overdose of indacaterol.

In COPD patients, single doses of indacaterol 3000 mcg were associated with moderate increases in pulse rate, systolic blood pressure and QTc interval.

Glycopyrrolate
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, repeated orally inhaled administration of glycopyrrolate at total doses of 124.8 mcg and 249.6 mcg once-daily for 28 days were well tolerated.

PATIENT COUNSELING INFORMATION
Advise the patient to read the FDA-approved patient labeling (Medication Guide and Instructions for Use).

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This Is What the AARC Does for You

The faces you see on the cover of this month's issue of *AARC Times* tell many stories. Karsten Roberts, MS, RRT, RRT-ACCS, spends his days at the bedsides of patients in the ICU. Justin Misuraca, BS, RRT, RRT-NPS, brings his expertise to children who require air medical transport. Gretchen Stanton, BSRT, RRT, has found her calling in the hospice setting, where she ensures patients receive quality care in the last days of their lives.

The one thing they all have in common is their AARC membership. Why did they join? Why did you? Why does anyone? That's a question worth asking because the answer is as vast and varied as those 23 individual members on this month's cover.

Cover photo RTs are:
1. Gretchen Stanton, Surprise, AZ
2. Karsten Roberts, Philadelphia, PA
3. Char Raley, Sioux Falls, SD
4. Fams Taal, Chicopee, MA
5. Daneen Nastars, Galveston, TX
6. John Blaz, Selma, TX
7. Saleem Hamilah, Sofan's City, Sana'a, Yemen
8. Sharon Armstead, San Marcos, TX
9. Ken Czechowicz, Claremont, NH
10. Elizabeth Summit, Indianapolis, IN
11. Joseph Ariale, Summerville, SC
12. Hannah Beriault, Augusta, GA
13. Donna Tanner, Cleveland, OH
14. Scott Marlow, Cleveland, OH
15. Valerie David, Atlanta, GA
16. Justin Misuraca, Comerce City, CO
17. Ann Meicher, Mauston, WI
18. Nicholas McCord, Summit, WI
19. Josh O'Sullivan, Dayton, OH
20. Dawn Robinson, Lubbock, TX
21. Joseph Nicoletti, Syracuse, NY
22. Maya Jenkins, Bolingbrook, IL
23. Brook Goodrich, Pleasant Grove, UT

Communication channels

For many respiratory therapists, AARC membership is a window into the wider world of their profession. Through benefits such as *AARC Times*, AARC.org, and more, the Association delivers targeted news and information they won't find anywhere else. This includes stories like the one we published in this magazine in January about a therapist who brings sick children from her native Colombia and other countries to Shriners Hospitals for Children in St. Louis for the care they could not receive at home. Or the *AARC Career News* article in January about RTs at Loma Linda Medical Center who are breaking new ground in the area of lung ultrasound. And the AARC.org story in February featuring a harmonica group made up of pulmonary rehabilitation patients who practiced all year for a performance at their holiday party last December.

For others, the Association's science journal, Respiratory Care, tops the list of membership benefits. Published since 1956, the Journal delivers the peer-reviewed medical studies that drive change and innovation in the respiratory care profession.

Many articles, like the one in the March issue on the proactive use of high-flow nasal cannula with critically ill subjects, target bread and butter therapies used by RTs every day on the job. Others, such as the May 2017 study on the impact of a respiratory therapy assess-and-treat protocol on adult cardiothoracic ICU readmissions, document the value that RTs add to the health care team. Others still report outcomes from the use of new technology, such as the December 2017 paper on predicting extubation outcome by cough peak flow measured with a built-in ventilator flow meter.

AARC members who want to communicate directly with their peers have every opportunity to do just that through the AARC's professional networking site, AARConnect. Professionals throughout the Association share news and information on AARConnect every day, often in near-real time. That means if you have a question about a new ventilator your hospital just purchased, or your boss asked you to research mask interfaces, or you just want to find out how your colleagues are handling the latest flu epidemic, you need only log on to AARConnect, pull up your discussion lists, and start typing.

Educational opportunities

The AARC's communication channels are matched by an equally robust set of educational opportunities. Nowhere else will therapists find the same breadth and depth of topics as those offered through AARC University, a one-stop shop for courses offered online, and its live online programming cousin, Webcast Central.

Thanks to these platforms, members can take part in everything from one-hour sessions on hot-button topics, like reducing harm from respiratory depression associated with opioids, to in-depth courses such as the Pulmonary Disease Educator Course. Prep courses for those seeking to earn their RT creden-

tials or advance their specialty credentials are available as well. Presented by leading therapists and pulmonary physicians, these courses all offer the CRCEs that RTs need to maintain their licenses to practice. Many of the online courses are free to members, making it possible for them to earn more than 50 CRCEs at no cost.

For those seeking to build connections with their fellow RTs while earning those all-important CRCEs, the Association hosts two major meetings every year. The AARC Congress takes place over four days in the fall and offers attendees the chance to come face to face with their colleagues from across the country and around the world. It's the biggest and most widely respected respiratory care meeting anywhere all year long, and those who attend come away with a renewed sense of optimism about their profession.

The AARC Summer Forum is a great place for managers and educators to get up to speed on developments likely to impact their departments and programs and to network with each other about the challenges and opportunities coming down the pike.

Your professional champion

These communications and educational benefits are joined by a plethora of other membership advantages as well — everything from discounts on consumer goods to dedicated websites for respiratory products and services (RespiratoryCareMarketplace.com) and for patients and families (YourLungHealth.Org).

Many AARC members, though, would argue that the Association's most important role is to serve as their professional champion. The AARC also has that covered.

Government affairs: The AARC supports a Political Advocacy Contact Team that marches up Capitol Hill every year to lobby members of Congress on legislation important to the profession.

Professional representation: The Association remains apprised of developments underway by other organizations and makes sure the RT's voice is heard when issues involve respiratory care.

Clinical practice guidelines (CPGs): You know those respiratory care protocols that allow you to assess and treat patients? They were driven by the AARC CPGs, which often serve as the starting point for protocol development.

International affairs: The International Council for Respiratory Care, founded by the AARC, has opened up the lines of communication between U.S. RTs and their professional counterparts abroad.

Patient advocacy: The Association hosts its annual Patient Advocacy Summit to draw attention to the needs of chronic respiratory disease patients. AARC is also co-sponsoring a new award to acknowledge outstanding RTs in the role of patient advocacy.

Public relations: The AARC sponsors National Respiratory Care Week in October, regularly issues press releases on issues important to the profession, and works with media to ensure accurate information about the profession is disseminated.

Social media: The Association gets the word out about respiratory care and respiratory therapists everyday via its presence on Facebook, Twitter, and LinkedIn.

Long-time AARC members will tell you, the AARC has the whole package. Regardless of which benefits are most important to you, the Association is the place to find them. ■

Your Professional Career Starts with You

by Mike Hess, BS, RRT, RPFT, AARC Member since 2006

If you are reading this in AARC Times, thank you for being ahead of the game and supporting our profession! But my message here isn't really for you. I would ask you for a favor, though: Print this out, make some copies, and post them in your break rooms and common areas. Thanks, and enjoy the rest of your shift!

If you're reading this after taking it down from the bulletin board in your break room, hi there! I'm guessing you're not a member of the AARC. Now, before you say, "Whatever," and pin this back up for the next therapist to come by, let me say something that you may not have heard very often about not being an AARC member: I understand.

I understand because not all that long ago, I was exactly where you are. Right now you're probably thinking, "What does AARC do for me? They just want my money. It's an old boys' club. They don't listen to what I need. FIGHT THE POWER!" It's Us vs. Them, it's the therapists who know better, taking the moral high ground, fighting the good fight, vs. the way we've always done it. Then it occurred to me: this was a fight We could never win. Not because We were right and They were wrong, or because They had more power than We did. It was much simpler than that.

We could never beat Them because there is no We or Them. There's only Us.

We are all part of one group. When AARC succeeds, we all benefit. When AARC struggles, we all shoulder the burden. Whether we pay dues or not, we are invested in the success of our professional organizations, because they give us the infrastructure to decide what the future will bring. No individual can do this alone. You think AARC has struggled to lobby legislators and convince regulators of the importance of respiratory care? Imagine doing it on a weekend trip up to Capitol Hill after your shift; now imagine doing it all by yourself.

Perhaps you're asking yourself, "If we're all de facto AARC members anyway, what's the point of actually paying dues? I'm going to get the good stuff anyway, right? I can just coast on through and let everyone else do the heavy lifting."

To a certain degree, perhaps that's true. But here's the thing — remember back at the beginning, that part when you were still thinking that AARC doesn't listen? That they don't care about your priorities? Well, if you aren't a member, how much of a voice can you honestly expect to have? When you elect not to pay dues, you are not taking a stand or making a point. You are only cheating yourself out of being an effective voice for our profession. Rather than sending a message by "voting with your wallet," you're essentially punishing yourself and working to ensure things NEVER change.

I know a lot of this may sound like a clichéd inspirational poster: "Be the change you want to see," and all that. I get it. If I hadn't walked this path myself, I would be thinking the exact same thing. But remember, clichés usually become clichés because they're true.

After I realized I was fighting against my own interests, I actually got involved, and I started having an impact. I was soon elected district representative to our state affiliate, which got me to the table. I felt we should start building inter-professional alliances with other clinicians, so I put together an inter-professional respiratory conference, with information and support from the Michigan Society for Respiratory Care and continuing education credit approval from the AARC.

I have been able to provide input on our state legislative agenda. I believe telehealth will be a major route for RTs to provide service in the future, so I got a telehealth committee established to be ready for (and help influence) new telehealth regulations in Michigan. Now, I find myself serving on our executive committee as president-elect, and I have direct input on what our priorities should be. I've gone from waiting for someone to listen to setting the agenda myself.

I realize that not everyone has the time for direct service like this. That's OK! Being a member isn't necessarily about massive time commitments or boring meetings or enlisting for committees. Your membership dues give you license to participate, to elect people you feel will best represent your interests, and to hold people accountable if they aren't listening. Better yet, your membership dues give our organizations the resources they need to represent multiple efforts at the same time, increasing the odds that your specific cause gets the attention it deserves and amplifying the voice of EVERY therapist.

No organization is perfect. There will be times that the AARC will do things that you disagree with, but as I tell my patients, I cannot help unless you tell me what's wrong. I can't fix things if you tell me everything is fine, or worse, say nothing at all. The same is true for my role as your representative and advocate.

So please, stop saying nothing. Come join Us, and Let's write the future of respiratory care together. ■

Advocacy at Work

by Carolyn Williams, BS, RRT, FAARC, member of the AARC Political Action Contact Team, AARC Member since 1990

The AARC is involved in various ways to advance the profession of respiratory care. Education, research, participation in international activities, and advocacy are some areas where the labor of the AARC stands out.

One area that we focus on is political advocacy for our patients, members, and the profession. This has been a challenging task for the respiratory therapists who embark on this charge, particularly during the Annual Hill Day, when we visit Capitol Hill and Congress. Some may wonder why we continue to hold Annual Hill Day.

As respiratory therapists, we must be the voice for our patients, and this should not stop at the bedside. We have the ability, expertise, and desire to make a difference in the lives of our patients, and we should continue advocating for their needs. The AARC leads the way and helps RTs make sure their voice and the voices of patients are heard. It means a lot to me as an RT to participate like this because I am able to promote my profession and I have the opportunity to meet and speak with congressional leaders about our patients' concerns.

The AARC needs assistance from all RTs, even if you are not making the trip to Washington, DC. Membership is vital to the success of our organization and our Virtual Lobby Campaign. The main campaign happens two to three weeks prior to Annual Hill Day in Washington. During this time, we encourage our members, patients, family members, and associates to communicate with their individual legislative members via email or by regular mail. The intent is to send large volumes of communication to congressional leaders, informing them of our upcoming visit and to brief them on which issues are important to us.

It is very important that the AARC has the backing of all members so that we may have a successful visit with our elected officials. If we had all of our nearly 50,000 members in the AARC participating, I feel our voices would send a very strong message on federal policies. We do not have 50,000 members, we have almost 50,000. If every AARC member sent some form of communication to their elected officials, imagine the statement that would make when we have our Hill Day visit! It is crucial that our voices are heard in the offices where changes are made.

Through political advocacy, we speak to congressional leaders about health care policies that will have a direct impact on our patients with the sole purpose of enhancing patient care. We can inform members of Congress about the needs of our patients and encourage them to support our issues, which include better access to respiratory therapists and educating patients and their families to learn self-management skills that can help reduce or prevent costly interventions.

Our visits include patient advocates who can speak directly about issues affecting them in their daily lives with respiratory disease. While speaking with congressional leaders in the presence of patients, we are encouraged when we see a head nod or questions being asked. We feel we have made a positive impact in the delivery of our message. Political advocacy holds the key to moving legislative changes forward for our patients and our profession. We know this is a slow process; however, it is crucial that we continue with our efforts.

Access to health care is a major concern today. There are many patients who live in remote areas with limited access to health care. Telehealth can help deliver respiratory care services, such as patient education, by using telecommunications when the patient cannot have a face-to-face visit to receive services. This year, we are advocating for Medicare to include respiratory therapists as telehealth practitioners to provide disease management services to beneficiaries with COPD, including remote patient monitoring. Patients should have access to telehealth practitioners' expertise, and the AARC will continue to advocate for the recognition of the value respiratory therapists bring to their patients and the health care system overall. ■

With Support from AARC, TSRC Saves Licensure in Texas

by Russell E. Graham, BSRC, RRT, CPFT, FAARC, Immediate Past President of the Texas Society for Respiratory Care, AARC Member since 2004

This story begins in May 2014, when the Texas Sunset Commission, a group of legislators charged with overseeing health professions regulation in the state, released a report a couple of days before the Texas Society for Respiratory Care (TSRC) annual meeting. No big deal, happens every legislative session, right?

Well, in this case, it was a big deal. For respiratory care and 18 other health occupations, this was a really big deal, because the Sunset staff recommended to the Sunset Commission that a number of health occupations be deregulated, respiratory care among them. Imagine being at the podium, as was then-TSRC President Mark Barch, MS, RRT, announcing to your membership that "they" want to take away our license. In the words of a well-known comedian, "There was pandemonium!"

Why was this happening? Texas had just elected a new governor and lieutenant governor, both very conservative and both pro-business. They believe occupational licensing/regulation restricts the growth of business, and their desire was — and still is — to do away with it.

Organizing a group of RTs to a single task is much like herding cats. Part of the "pandemonium" I mentioned above involved individual action and acting on disinformation. It included calls to the governor's office, and even contact with federal officials. We quickly learned that crying "woe is me" falls on deaf ears. For a group seeking to be called a profession, it promotes the opposite. It draws focus to the wrong points and makes your effort weaker. It is, however, human nature.

The first call the TSRC Board made was to the AARC Executive Office. We strategized a response — a measured response. The AARC was invaluable in obtaining letters illustrating why deregulation was a bad idea. The TSRC included all of these letters in our submission packet to Sunset. We developed a timeline of key dates, most of which were very tight. Sunset had to finish their work prior to the beginning of the incoming legislative session.

We did our best to focus our members on emails and letters to the Sunset members. We were prepared to drop a petition in the lap of Sunset. We planned a day in Austin, where we would start to meet and shake hands with the legislators on the Sunset Commission.

We also defined the roles of the TSRC and the AARC and decided, in all things, the TSRC would be the face of the effort. While the AARC was actively involved throughout, AARC legislative staff explained that marshaling a national response to a state issue like this would do nothing but irritate our legislators, who are really only interested in hearing from their own constituents. So the TSRC took the lead, with the AARC available to assist wherever necessary.

Prior to descending on our state capitol in Austin, the TSRC Board sent out an advance party to get a feel for the landscape. This advance party consisted primarily of myself, Gaylene Lee, MEd, RRT, RRT-NPS, CTTS, who was then our president-elect, and Chris Russian, PhD, RRT, RRT-NPS, RPSGT, who was our society secretary at the time and also conveniently lives in the Austin area.

On the day of the Sunset Commission hearing, we showed up in strength, wearing suits, and loaded for bear. Members of the AARC Executive Office staff, along with prominent AARC leadership, were there to offer their support. The TSRC Board of Directors was there. We sat through an inflammatory and mind-numbing morning while we listened to Sunset staff tell the Sunset members why we didn't need to exist. They were very blunt, to say the least, blunt enough that all of us probably bled a little from biting our tongues.

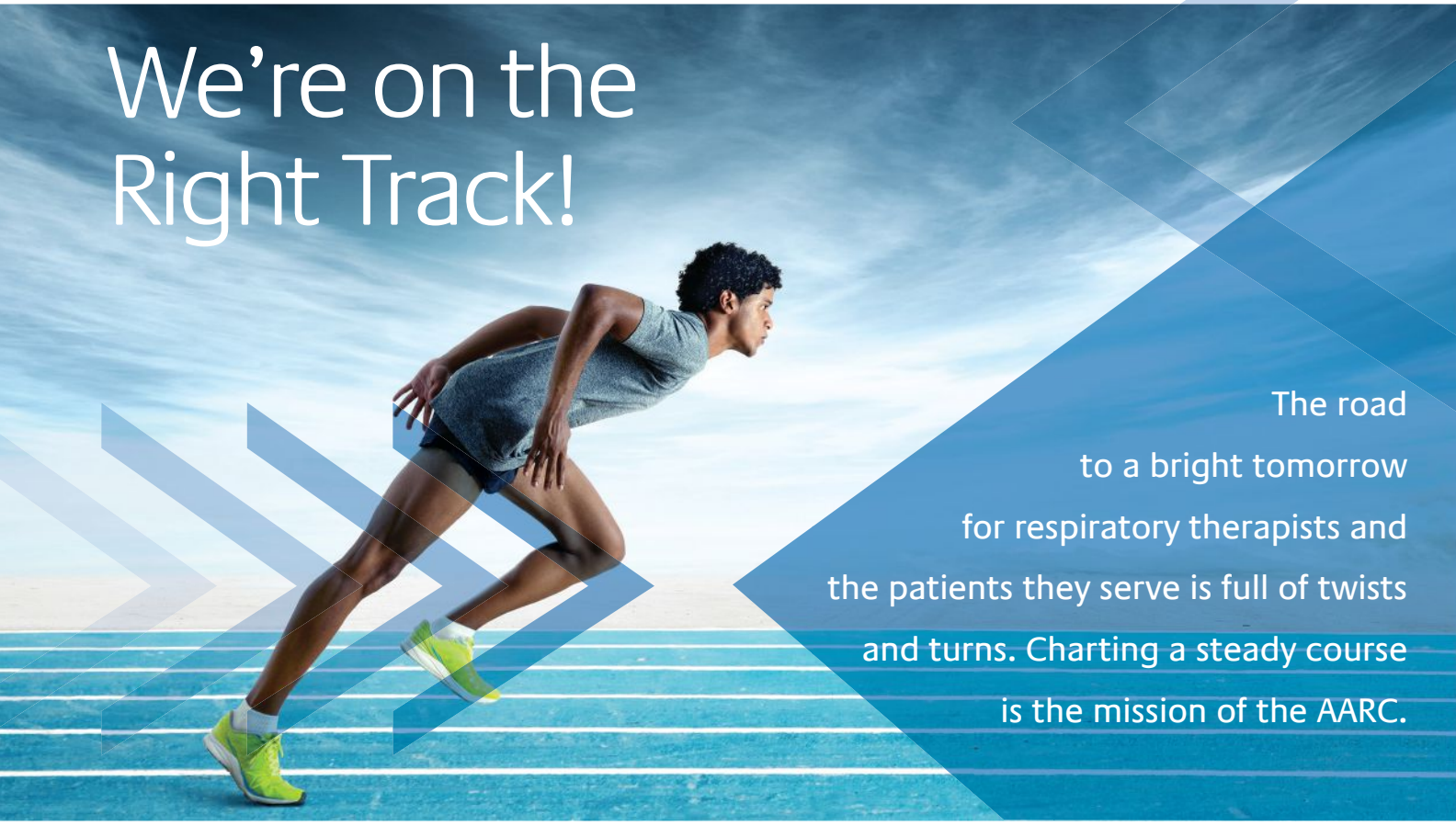
As the afternoon wore on, we finally had our moment. I expected the worst. However, at that moment, we discovered that we had at least two friends in the room: Senator Jane Nelson and Representative Four Price, as well as their staff. They were chair and co-chair of Sunset, respectively. We finished our testimony. Our preparation was worth it. We left that day with hope. It was a long tunnel, but we could see a light flickering at the end of it. However, we still had work to do. Legislation doesn't pass itself, no matter how noble the idea behind it is.

Learning the structure of the legislature came first. It was like learning a new language. There were committee meetings that had indirect implications for our legislation. We appeared at those. Legislation outside the Sunset Bills was introduced. We learned to watch the legislative calendar. We communicated with AARC Executive Office leadership on a regular basis. We became better organized. We learned the value of at least appearing to be a well-oiled machine. We never hired a lobbyist.

In the end, we appeared at every committee meeting related to the bills that would preserve legal credentialing for the respiratory care profession. We witnessed the train almost run off the tracks as the House bill was withdrawn. Our future had gotten lost in the middle of a verbal brawl on the floor of the Texas House, a victim of pork barrel politics. All hope appeared lost. I began to ponder the "what ifs" of deregulation.

Again, the unexpected occurred. The Senate version of the bill came forth, with all compromises already in place and closed to further amendments. The Senate quickly passed it and sent the new bill to the House. Then, just over a year from the initial Sunset "surprise," we sat in the House chamber as the 84th Texas Legislature drew to a close — and we watched that bill pass. Respiratory therapists would remain legally credentialed in Texas, with regulation transferred from the Department of State Health Services to the Texas Board of Medicine. With one battle done, we're ready for the next! ■

We're on the Right Track!



The road to a bright tomorrow for respiratory therapists and the patients they serve is full of twists and turns. Charting a steady course is the mission of the AARC.

Our Association continues to address issues of concern and move ahead with plans to position respiratory therapists for success

by Debbie Bunch

Almost every day in meetings, respiratory therapy events, and on social media, members and non-members alike ask the question "What benefits come with AARC membership?" For those in the know, and those who maximize their membership to the fullest, the answer is simple. After rattling off a laundry list of benefits, the comment "Wow! I didn't know that" usually follows.

Sometimes as an organization, we don't think about blowing our own horn and communicating the value and importance of AARC membership. In this issue and as we celebrate "We Are AARC", we'll try to do a better job of communicating to you what comes with professional membership, why it's important, and why it benefits you directly as a respiratory therapist.

Improving care for respiratory patients

2017 was a challenging year for the nation's health care system. A rash of major weather events put hospitals in the crosshairs, and ongoing debate about the best way to insure Americans continued to unsettle providers across the continuum of care. The AARC kept tabs on it all while continuing to build on efforts to improve care for respiratory patients and make sure the profession was on solid ground for whatever lay ahead.

"As we march further into the 21st century, it is clear that health care will continue to face obstacles, and health care providers will be called upon to reinvent their services and reinvest in themselves to overcome them," says AARC President Brian Walsh, PhD, RRT, FAARC. "The AARC remains devoted to ensuring respiratory therapists are well positioned for the changes that are undeniably coming our way."

The Association's major accomplishments of 2017 show we are on the right track.

Finally, an action plan for COPD

The Association joined fellow organizations fighting for better care for people with COPD in celebrating a major victory mid-year with the release of the nation's first ever COPD National Action Plan. Developed by the National Heart, Lung and Blood Institute (NHLBI) with input from the AARC and other stakeholders, the plan was unveiled at the American Thoracic Society conference in Washington, DC, on May 23.

"Sixteen million Americans have been diagnosed with COPD, and many more have the condition but don't know it," said AARC Chief Business Officer Timothy Myers, MBA, RRT, RRT-NPS, FAARC, who attended the event on behalf of the AARC. "This action plan addresses many of their unmet needs in a systematic fashion and will assist clinicians and researchers working to address those needs."

NHLBI Director James Kiley, MD, officially recognized the AARC during the press conference held prior to the plan's release, noting the significant role the Association played in bringing the plan to fruition. He issued a special message to RTs about their role in implementing the plan during National COPD Awareness Month as well, saying, "Respiratory therapists and the AARC are critical for this initiative, for the vital roles you play in the diagnosis, treatment, and management of COPD."

The plan includes five overarching goals focused on COPD awareness and understanding, the preparation of health care providers to deal effectively with COPD, data-driven efforts to create a better understanding of disease patterns, greater investments in COPD research, and collaboration on the part of federal and nonfederal partners.

AARC Executive Director Thomas Kallstrom, MBA, RRT, FAARC, urged members to lead the way in the implementation of these goals. "We encourage respiratory therapists everywhere to read the document and share it with their colleagues involved in the care and treatment of people with COPD," he said.

AARC 70th anniversary

On the home front, the AARC marked the 70th anniversary of the official filing of articles of incorporation for the Association on April 15th. Members used the occasion to showcase the history of respiratory care and the AARC at the Dittrick Museum of Medical History on the campus of Case Western Reserve University in Cleveland.

The museum came to host the event after long-time AARC member Steve DeGenaro, RRT, donated his collection of vintage photos of medical history, including the iron lung in action. "I have always been interested in history and have collected vintage photography related to medical history for decades," said DeGenaro. "The iron lung photography — and vintage respiratory therapy photography in general — is the bridge between my career and my hobby."

Spanning several decades, the photos offered a look back into a medical treatment that has become synonymous with the polio epidemic, which inspired fear across the nation in the first part of the 20th century. For many victims, the iron lung was the difference between life and death.

The photos were displayed in a special exhibit that ran throughout the month of April, with a special event scheduled for April 22nd that was attended by national AARC leaders and members from the surrounding area in Ohio. A special VIP reception for current and former leaders in the Ohio Society for Respiratory Care was followed by a day-long conference featuring talks on respiratory therapy protocols, the history of the AARC, mechanical ventilation, post-discharge respiratory care, and international respiratory care. The event culminated with a tour through the exhibit itself.

All proceeds from the conference registration went to benefit the American Respiratory Care Foundation's Virtual Museum fund.

10 More Things the AARC Did for You in 2017

1 **Disaster response:** 2017 was a bad year for natural disasters in the United States and its territories, with major hurricanes striking several, tornadoes and severe weather affecting others, and wildfires devastating others still. The AARC opened up its Disaster Relief Fund on multiple occasions for members living in federally declared disaster areas.

2 **Licensure challenge:** When de-licensure of the respiratory care profession came up in the Iowa legislature, the Iowa Society for Respiratory Care, with the help of government affairs staff in the AARC Executive Office, was on the case. A week later, the de-licensure bill had not only been rejected, but it was torn in half by the subcommittee chair responsible for moving the bill any further.

3 **Position statements/issue paper review:** The AARC released revised position statements on Respiratory Therapy Education, Telehealth and Respiratory Therapy, and Home Respiratory Care Services for member review. Members were also asked to weigh in on the retirement of an issues paper on Utilization in Respiratory Care.

4 **Sputum Bowl:** Changes to our iconic annual knowledge competition were put into motion late in the year as the Board voted to discontinue the practitioner portion of the Bowl after years of declining participation. No need to worry though… the student competition is alive and strong and will be better than ever in 2018. (Stay tuned for more on the 2018 event in your July issue of *AARC Times*.)

5 **"Go Visit" Challenge:** Executive Office staff members launched a new "Go Visit" campaign by visiting RT staff at a local health care facility to learn about their concerns for the profession and answer any questions they might have about the Association or other respiratory care issues. Members in the state societies were quick to take on the challenge and soon began sending members out to do the same in hospitals, schools, and other facilities throughout their states.

6 **Home oxygen abstract at ATS Conference:** Attendees at the American Thoracic Society conference learned more about a survey conducted by the AARC on the role of the respiratory therapist in pre- and post-discharge practices specific to COPD. Findings from the Respiratory Therapist Home Oxygen for Chronic Obstructive Pulmonary Disease (RisOTTO) study were presented by Dr. Y.M. Tan and AARC Executive Director/CEO Thomas Kallstrom during during the abstract presentations session at the meeting, letting everyone know that patients going home on supplemental oxygen could benefit from greater RT involvement in their care.

Moving forward

The AARC continued its ongoing mission to move the profession forward in 2017 by releasing a new guide for state societies looking to change their licensure laws to require the RRT credential for entry into practice.

Coming on the heels of licensure changes to that took effect in Ohio, California, and Arizona, the document, titled "Guidance Document Regarding RRT Entry to Licensure," outlines the steps state societies should consider when changing their licensure laws to reflect an RRT credential minimum.

"All new RTs today graduate from at least an associate degree program, and that means they are all qualified to earn the RRT credential," said Immediate Past President Frank Salvatore, MBA, RRT, FAARC. "The problem lies in the fact that our licensure laws were mainly enacted before all therapists could earn the RRT and thus were linked to the CRT. We want to help the states change their laws so that the RRT is linked to licensure."

In an effort to avoid a negative impact on the workforce, which could lead to unintended consequences in patient care, the AARC reaffirmed its position that any state making such changes should allow for CRTs to be grandfathered into their laws or rules and the same consideration should be given to CRTs from out of state. Current therapists are grandfathered into the new laws in Ohio, California, and Arizona and are likely to be in other states that move in this direction.

The Association believes moving to an RRT license will bode well for the profession as a whole, as our colleagues in health care come to recognize that therapists are trained to work at the RRT level. Said Dr. Walsh, "It is the AARC's belief that the complexity of the patients we serve has grown and requires a high level of competency. We have worked closely with CoARC and the NBRC to ensure those prepared individuals get the opportunity to obtain the highest credential. Individuals who obtain the RRT credential exemplify the dedication to professional excellence and demonstrate that commitment."

The Association proceeded with plans to investigate the need for an advanced practitioner role for RTs last year as well, inviting qualified organizations to submit bids for conducting a national needs assessment for a project titled, "Exploring the Status of Non-Physician Advanced Practice Provider Employment Density and Sufficiency of Educational Background in the Care of Patients with Cardiopulmonary Disease."

The project's key aim will be to determine whether an education and/or workforce gap exists within the current and predicted future employment of non-physician advanced practice providers caring for patients afflicted with cardiopulmonary disease. Updates on the progress of the needs assessment will be issued as they become available.

Telehealth legislation

A Summer Virtual Lobby event took place in July 2017 to reinforce the profession's stance, and three telehealth bills that included RTs as covered providers were introduced into Congress. This mission has extended into 2018 with our most recent Capitol Hill Advocacy Day, which just wrapped up last month. Telehealth legislation took center stage during the AARC's annual Capitol Hill Advocacy Day in April, as Political Advocacy Contact Team (PACT) members flocked to Washington, DC, to educate their members of Congress on the merits of telehealth and why RTs should be key providers in any legislation introduced in the House or Senate.

A virtual lobby campaign preceded the event, and the final results showed that 32,395 messages were sent,

For patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and/or emphysema

SUCCESS

of a proven LAMA

FULL

audiovisual feedback each time a dose is inhaled

INDICATION

SEEBRI™ NEOHALER® (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.

IMPORTANT SAFETY INFORMATION

SEEBRI NEOHALER is contraindicated in patients with a hypersensitivity to glycopyrrolate or to any of the ingredients.

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

Immediate hypersensitivity reactions have been reported with SEEBRI NEOHALER. If signs occur, discontinue immediately and institute alternative therapy. SEEBRI NEOHALER should be used with caution in patients with severe hypersensitivity to milk proteins.

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Improved symptom control all day and night with twice-daily SEEBRI™ NEOHALER® (glycopyrrolate)

- **>120 mL improvement in FEV_1 $AUC_{0\text{-}12hr}$ vs placebo at Week 12 in two trials (primary end point)**[1]
  - 139 mL improvement in FEV_1 $AUC_{0\text{-}12hr}$ vs placebo at Week 12 in Trial 1
  - 123 mL improvement in FEV_1 $AUC_{0\text{-}12hr}$ vs placebo at Week 12 in Trial 2
- **Reduction in rescue medication use all day and night with twice-daily SEEBRI NEOHALER vs placebo (secondary end point)**[1,2]
  - SEEBRI NEOHALER is not a rescue inhaler and is not indicated to treat episodes of acute bronchospasm
- **Whirring noise during inhalation confirms correct placement of the capsule in the chamber**[1]
- **Clear capsule design allows patients to visualize any medication left in the capsule and inhale all of the remaining dose**[1]
- **SEEBRI capsules are for oral inhalation only and should not be swallowed**[1]

Sunovion Answers is there for your patients with support and answers. Call 1-844-276-8262 for more information.

Visit www.SEEBRI.us to learn more.

AUC, area under the curve; FEV_1, forced expiratory volume in 1 second; LAMA, long-acting muscarinic antagonist.

SEEBRI NEOHALER 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.

STUDY DESIGN

The efficacy of SEEBRI NEOHALER was established in two 12-week, pivotal trials. The safety of SEEBRI NEOHALER was established in four 12-week lung-function trials and one 52-week, long-term study.[1,2]

For additional information, please see the Brief Summary of Prescribing Information on the following pages.

Please visit www.SunovionProfile.com/SEEBRI for full Prescribing Information and Patient Information.

References: 1. SEEBRI NEOHALER [prescribing information]. 2017. 2. Data on file. GEM1 and GEM2 clinical study reports. Sunovion Pharmaceuticals Inc.

seebri™ neohaler®

(glycopyrrolate) inhalation powder 15.6 mcg

seebri™ neohaler®

(glycopyrrolate) inhalation powder

BRIEF SUMMARY OF FULL PRESCRIBING INFORMATION

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

INDICATIONS AND USAGE

SEEBRI™ NEOHALER® is 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

SEEBRI NEOHALER is contraindicated in patients who have demonstrated hypersensitivity to glycopyrrolate or to any of the ingredients.

WARNINGS AND PRECAUTIONS

Deterioration of Disease and Acute Episodes

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

SEEBRI NEOHALER should not be used for the relief of acute symptoms, i.e., as rescue therapy for the treatment of acute episodes of bronchospasm. SEEBRI NEOHALER 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 SEEBRI NEOHALER no longer controls symptoms of bronchoconstriction; the patient's inhaled, short-acting $beta_2$-agonist becomes less effective; or the patient needs more inhalation 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 SEEBRI NEOHALER beyond the recommended dose is not appropriate in this situation.

Paradoxical Bronchospasm

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

Immediate Hypersensitivity Reactions

Immediate hypersensitivity reactions have been reported after administration of SEEBRI NEOHALER. 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, SEEBRI NEOHALER should be discontinued immediately and alternative therapy instituted. SEEBRI NEOHALER should be used with caution in patients with severe hypersensitivity to milk proteins.

Worsening of Narrow-Angle Glaucoma

SEEBRI NEOHALER 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

SEEBRI NEOHALER 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, the adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in clinical trials of another drug and may not reflect the rates observed in clinical practice.

The SEEBRI NEOHALER safety database included 3415 subjects with COPD in four 12-week lung function trials and one 52-week long-term safety study. A total of 1202 subjects received treatment with SEEBRI NEOHALER 15.6 mcg twice-daily (BID). The safety data described below are based on the four 12-week trials and the one 52-week trial.

12-Week Trials

The incidence of adverse reactions associated with SEEBRI NEOHALER in Table 1 is based on four 12-week, placebo-controlled trials in 2908 subjects with COPD. In the total population, 61.2% of patients had moderate COPD and 37.8% had severe COPD. Overall, 62% were males, 90% were Caucasian, and the mean age was 63 years (ranging from 41 to 89 years). In this population, 53% were identified as current smokers with an average smoking history of 48 pack-years.

The proportion of subjects who discontinued treatment due to adverse reactions was 2.4% for the SEEBRI NEOHALER-treated patients and 3.8% for placebo-treated patients.

Table 1. Adverse reactions with SEEBRI NEOHALER (greater than or equal to 1% incidence and higher than placebo) in COPD patients

Adverse Reaction	SEEBRI NEOHALER 15.6 mcg BID (N=961) n (%)	Placebo (N=938) n (%)
Upper respiratory tract infection	32 (3.4)	22 (2.3)
Nasopharyngitis	20 (2.1)	18 (1.9)
Urinary tract infection	13 (1.4)	12 (1.3)
Sinusitis	13 (1.4)	7 (0.7)
Oropharyngeal pain	17 (1.8)	11 (1.2)

Other adverse reactions occurring more frequently with SEEBRI NEOHALER than with placebo, but with an incidence of less than 1% include rash, pruritus, gastroenteritis, hypersensitivity, atrial fibrillation, insomnia, pain in extremity, dysuria, vomiting, productive cough, and diabetes mellitus/hyperglycemia.

52-Week Trial

In a long-term safety trial, 507 subjects were treated for up to 52 weeks with glycopyrrolate 15.6 mcg twice-daily or indacaterol 75 mcg once-daily. The demographic and baseline characteristics of the long-term safety trial were similar to those of the placebo-controlled efficacy trials described above. The adverse reactions reported in the long-term safety trial were consistent with those observed in the placebo-controlled trials of 12 weeks. Additional adverse reactions that occurred with a frequency greater than or equal to 2% in the group receiving glycopyrrolate 15.6 mcg twice-daily that exceeded the frequency of indacaterol 75 mcg once-daily in this trial were: diarrhea, nausea, upper abdominal pain, fatigue, bronchitis, pneumonia, rhinitis, back pain, arthralgia, dyspnea, and wheezing.

Postmarketing Experience

The following additional adverse reactions have been identified during worldwide post-approval use of glycopyrrolate, the active ingredient in SEEBRI NEOHALER, at higher than the recommended dose. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure. These adverse reactions are: angioedema, paradoxical bronchospasm and dysphonia.

DRUG INTERACTIONS

Anticholinergics

There is a potential for an additive interaction with concomitantly used anticholinergic medications. Therefore, avoid coadministration of SEEBRI NEOHALER with other anticholinergic-containing drugs as this may lead to an increase in anticholinergic effects.

USE IN SPECIFIC POPULATIONS

Pregnancy

Teratogenic Effects: Pregnancy Category C

There are no adequate and well-controlled studies with SEEBRI NEOHALER in pregnant women. Because animal reproduction studies are not always predictive of human response, SEEBRI NEOHALER should only be used during pregnancy if the potential benefit to the patient justifies the potential risk to the fetus. Women should be advised to contact their physician if they become pregnant while taking SEEBRI NEOHALER.

Glycopyrrolate was not teratogenic in Wistar rats and New Zealand White rabbits at approximately 1400 and 530 times, respectively, the MRHD in adults (on an AUC basis at maternal inhaled doses up to 3.83 mg/kg/day in rats and up to 4.4 mg/kg/day in rabbits).

Non-teratogenic Effects:

Glycopyrrolate had no effects on peri-natal and post-natal developments in rats at approximately 1100 times the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 1.88 mg/kg/day).

Labor and Delivery

There are no adequate and well-controlled human trials that have investigated the effects of SEEBRI NEOHALER during labor and delivery. In human parturients undergoing Caesarean section, 86 minutes after a single intramuscular injection of 0.006 mg/kg glycopyrrolate, umbilical plasma concentrations were low.

Nursing Mothers

It is not known whether SEEBRI NEOHALER is excreted in human breast milk. Because many drugs are excreted in human milk, caution should be exercised when SEEBRI NEOHALER is administered to a nursing woman. Since there are no data from well-controlled human studies on the use of SEEBRI NEOHALER by nursing mothers, a decision should be made whether to discontinue nursing or to discontinue SEEBRI NEOHALER, taking into account the importance of SEEBRI NEOHALER to the mother.

It is not known whether glycopyrrolate is excreted in human breast milk. Glycopyrrolate (including its metabolites) have been detected in the milk of lactating rats and reached up to 10-fold higher concentrations in the milk than in the blood of the dam.

Pediatric Use

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

Geriatric Use

Based on available data, no adjustment of the dosage of SEEBRI NEOHALER in geriatric patients is warranted. SEEBRI NEOHALER 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 SEEBRI NEOHALER, 45% were aged 65 and older, while 10% 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. SEEBRI NEOHALER should be used in patients with severe renal impairment (estimated GFR less than 30 mL/min/1.73m^2), including those with end-stage renal disease requiring dialysis, if the expected benefit outweighs the potential risk since the systemic exposure to glycopyrrolate may be increased in this population.

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, repeated orally inhaled administration of SEEBRI NEOHALER at total doses of 124.8 and 249.6 mcg once-daily for 28 days were well tolerated.

PATIENT COUNSELING INFORMATION

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

sunovion

Manufactured for:
Sunovion Pharmaceuticals Inc. Marlborough, MA 01752 USA

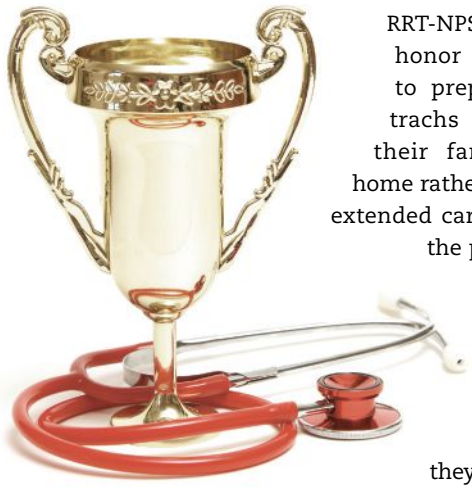
To report suspected adverse reactions, call 1-877-737-7226.
For customer service, call 1-888-394-7377.

with participation from 7,340 activists and 124 PACT members from 41 states and the District of Columbia. All told, 318 meetings were scheduled with members of Congress and their Congressional staff.

"Our annual trek energizes our members and gives them an opportunity to educate leaders on the scope of the RT profession and to provide their personal stories on how their expertise has helped improve the outcomes of their patients," said AARC Associate Executive Director for Advocacy and Government Affairs Anne Marie Hummel. "It is a tribute and acknowledgement of the value of respiratory therapists when our lobbyists conduct follow-up meetings and are told they remember our RTs and the issues they discussed in those meetings.""Our annual trek energizes our members and gives them an opportunity to educate leaders on the scope of the RT profession and to provide their personal stories on how their expertise has helped improve the outcomes of their patients," said AARC Associate Executive Director for Advocacy and Government Affairs Anne Marie Hummel. "It is a tribute and acknowledgement of the value of respiratory therapists when our lobbyists conduct follow-up meetings and are told they remember our RTs and the issues they discussed in those meetings."

New award programs

Respiratory therapists go to bat for their patients every day on the job, but some go well above and beyond in helping patients manage their disease and recover their quality of life. The AARC joined The FACES Foundation in 2017, launching a brand new award called the National Respiratory Patient Advocacy Award to honor AARC members who regularly advocate for their patients in settings ranging from the hospital to the community. The winner, along with two runners up, was announced during the Respiratory Patient Advocacy Summit held in conjunction with the AARC Congress in Indianapolis.



Christine Hartling, MHM, RRT, RRT-NPS, took home the top honor for her commitment to preparing children with trachs and ventilators and their families for living at home rather than in a hospital or extended care facility. "I have had the privilege of working in the pediatric world for the last 25 years, and it is amazing to me how resilient kids are and how they don't let a 'little' thing

10 More Things the AARC Did for You in 2017

7 **Congressional comments:** The AARC spoke up for chronic lung patients in its comments to key members of the Senate during the debates that took place on the American Health Care Act, noting the legislation would increase the number of uninsured by 23 million. The Association's bottom line: chronic lung patients need to keep their benefits.

8 **Fighting for home ventilation:** Noting ongoing problems with outdated policies that impact federal reimbursement for home mechanical ventilation, the AARC, working with other pulmonary and patient groups, continued to educate members of Congress on the need to ensure adequate coverage for these device for patients who depend on them to stay healthy and out of the acute-care hospital. With new leaders in Congress, the Association and others were able to gain support from Rep. Chris Collins, from New York, who wrote a letter to the HHS secretary appealing to him to resolve the problems and act on the group's formal National Coverage Determination Reconsideration request that had been submitted to the Centers for Medicare and Medicaid Services.

9 **New coalition:** The AARC was a key participant in a new complex technology coalition that began with a two-day session in Annapolis, MD. Spearheaded by the Association for the Advancement of Medical Instrumentation Foundation, the coalition will build a body of best practices around the procurement and use of this technology and user training. Coalition members have been assigned to teams to accomplish specific goals and two AARC members are leading one of the teams.

10 **Staff enhancements:** Two new leadership positions were created at the Executive Office, filled by long-time members of the staff. Timothy Myers was named chief business officer, a position reflecting his growing role in strategic, operational, and business aspects of the Association. Anne Marie Hummel stepped into the position of associate executive director for advocacy and government affairs.

like being on life support keep them from just being kids," she said. She says there is nothing better than "helping convince a family that they 'can.'"

Jeff Cain, RRT, was recognized for his 20 year involvement in bringing the summer camp experience to technology-dependent kids through the Trail's Edge Camp, where he currently serves as camp director. Jamie Causey, BSRT, RRT, AE-C, was recognized for her work with her local asthma coalition.

The Apex Award was also established last year as to recognize hospitals, home care companies, and long-term care facilities that meet a strict set of criteria deemed critical by the AARC for the delivery of high-quality respiratory care. The program replaces the Quality Respiratory Care Recognition program operated by the AARC for many years.

Major new initiatives in 2017 were implemented by the Association as it continued to deliver ongoing member benefits in areas ranging from government affairs, to publications, to communications, to education, to meetings, and more.

The first facilities to receive the Apex Award were announced mid-year and have been featured in a special Apex Award column in a number of *AARC Times* issues in the past year. See the Apex Recognition Award column in this issue for more on the final award winner for 2017 to see what it takes to win this national recognition and how receiving the award boosts the stature of RTs in the facility and community as a whole.

Certificate program for pulmonary rehab RTs

Continuing education remained a top priority for the AARC in 2017, with a plethora of new programs offered through AARC University. A new certification program was also in development throughout the year.

Through a partnership with the American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR), the Association was pleased to make the Pulmonary Rehabilitation Certification Course available to the respiratory care community in January. "This course is a great opportunity for individuals who have been working in pulmonary rehab for some time and for those who are considering joining the pulmonary rehabilitation team," said Shawna Strickland, PhD, RRT, FAARC, AARC associate executive director of member services. "The content was developed by leaders in the field and aligns with the AACVPR best practices."

The course covers all of the key components of a pulmonary rehabilitation program and offers therapists interested in this area the chance to get up to speed with the latest thinking on how to best use these programs to enhance the quality of life for those with chronic respiratory conditions. Those who successfully complete the course earn 12 hours of CRCE.

Clinical practice guidelines get a makeover

A new clinical practice guidelines development program kicked off late in the year, as team members were assembled from all across the nation to work on six new guidelines dealing with these everyday aspects of respiratory care: oxygen administration for adults, oxygen administration for infants and children, tracheostomy care for adults, tracheostomy care for infants and children, suctioning of the artificial airway, and capillary blood gas sampling for infants and children.

Dr. Walsh explained how this new development process differs from that used by the AARC for the development of previous clinical practice guidelines. "This new method still remains evidence-based; however, it allows us to be much more efficient. I believe we will produce quality products to help us improve patient care and demonstrate our value to the world."

The new guidelines are expected to provide respiratory care departments with the tools they need to further the development of protocols in their facilities. "This effort will update a couple of older guidelines, provide new recommendations in areas of clinical practice, and serve the medical community with evidence-based recommendations to improve patient care and safety," said Dr. Strickland.

Another successful year

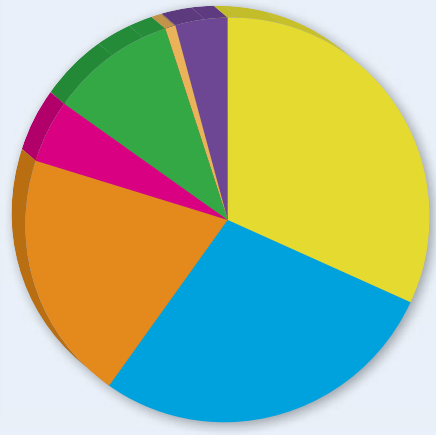
These major new initiatives in 2017 were implemented by the Association as it continued to deliver ongoing member benefits in areas ranging from government affairs, to publications, to communications, to education, to meetings, and more. It all added up to another successful year for the AARC and the members it serves. ■

2017 Annual FINANCIAL REPORT

In February 2018, the AARC engaged the public accounting firm Salmon Sims Thomas and Associates to conduct an audit of its financial operations. It issued an unqualified opinion stating that the AARC's financial statements were presented fairly and conform to generally accepted accounting principles.

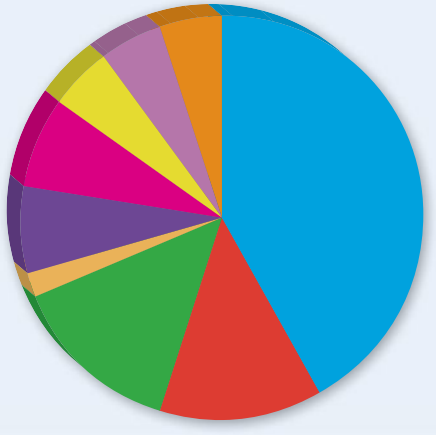
In 2017, the AARC's total revenues (excluding investments) were $10,053,041 and total expenses were $9,628,327. Figures 1 and 2 highlight the sources of last year's revenues and expenses. Net assets at the end of 2017 were $27,022,993. ■

Figure 1.
Total Revenues in 2017 (Excluding Investments)



- Convention and Meetings – 32%
- Member Dues – 28%
- Publications and Advertising – 20%
- Grants – 5%
- Education – 10%
- Marketing – 1%
- Other – 4%

Figure 2.
Total Expenses in 2017



- General and Administrative – 42%
- Publications and Advertising – 13%
- Convention and Meetings – 14%
- Grants – 2%
- Member Services – 7%
- Marketing – 7%
- Officers, Board, Committees – 5%
- Contributions to State Societies – 5%
- Education – 5%

AARC: Driven by Members, Supported by Partner Organizations

by Debbie Bunch

July 13, 1946, Chicago, IL. A small but diverse group of people interested in furthering the fledging field of "inhalation therapy" gathers at the University of Chicago Hospital. They sit down as individuals. They get up as members of a brand new organization we all know today as the American Association for Respiratory Care.

From then until now, the AARC has been organized, overseen, and operated by the members who pay its dues. The Association holds an annual election every fall to elect officers and directors, and the AARC state societies (also called affiliates) appoint members from their states to serve in the AARC House of Delegates. AARC Executive Office staff members carry out the objectives forged by members through their representatives on the Board of Directors and in the House.

While changes have been made over time, this basic structure has served the Association well, ensuring that the only votes that really count are the ones cast by members of the organization.

Central to the cause

Of course, members do much more than just vote. They are woven into the very fabric of the AARC, working in roles big and small to advance the profession.

You'll find them serving on the more than 20 standing, special, and ad-hoc committees charged with examining areas of the Association ranging from finances to the annual Sputum Bowl. These are the folks who make recommendations to the Board that end up, along with those made by the House, as AARC policy. Members are also out there serving as AARC representatives to outside groups and organizations like The Joint Commission and the American Heart Association, bringing the RT's voice to leaders in other areas of health care that can potentially impact respiratory care.

More than 100 members serve on the AARC's Political Advocacy Contact Team (PACT). As members of this team, they work tirelessly all year long to ensure legislative initiatives related to respiratory care at both the state and federal level are addressed in a timely fashion. PACT members come together every spring to trek up Capitol Hill to advocate for therapists and their patients before members of Congress.

The AARC also supports eight specialty sections that focus on specific areas of the profession, and these smaller groups are composed of members who are actively working to further their specialties in respiratory care. All of the sections host discussion lists on AARConnect, and on any given day of the week, members can be found talking about issues of concern.

A number of communities on AARConnect offer similar networking lists and zero in on even smaller, niche areas of the profession, such as neurorespiratory and medical missions. Members engaged in these niche areas hop onto these discussion lists to offer their advice, expertise, and support to other members looking for assistance.

Everywhere you turn

AARC members play a vital role in many other aspects of Association operations, too. You'll see them listed as authors of articles in *AARC Times*. They publish papers in Respiratory Care. They submit abstracts to the annual Open Forum. They propose lecture topics for the AARC Congress and Summer Forum. They present webcasts and online educational programs. They compete in the annual Sputum Bowl.

You'll find members participating in the formal and informal surveys promulgated by the Association each year to learn more about what members want and need in specific areas of the profession. They participate in focus groups formed to examine issues of concern. They volunteer to serve as reviewers for the AARC's clinical practice guidelines. They help the AARC develop patient education materials like the oxygen and aerosol therapy guides.

Members work on a range of special projects that enhance the value of AARC membership, too. One such example is the Virtual Museum that debuted a few years ago to ensure that the history of respiratory care would remain alive and well for decades to come.

AARC members run the show

When those first intrepid "inhalation therapists" and their physician and nursing colleagues got together in Chicago back in 1946, they envisioned an organization that would truly be operated by and for the people who joined it. Nothing has changed on that score. No matter where you look today, you'll find AARC members running the show at the AARC.

Alphabet soup, respiratory care style

A range or organizations govern the respiratory care profession. AARC, NBRC, CoARC, ARCF… these acronyms are well known in our profession. But ask the average therapist to define the structure and function of the groups they represent, and you're likely to be receive a faltering explanation at best.

We know it is hard to keep them all straight, so this issue of *AARC Times* is devoted to making that easier. On the following pages, you will find informative overviews of all our partner organizations — as well as two stories about state licensure boards and the AARC state societies — that are must-reads for everyone working in respiratory care today.

Your Professional Organizations, in a Nutshell

Like any profession, respiratory care depends on an array of professional organizations to oversee important aspects of the field. This issue of *AARC Times* provides a detailed look at those organizations and what they do for the profession. Here's a brief look at the responsibilities handled by each —

This Is What the AARC Does for Respiratory Care

- Education and Meetings
- Professional Networking
- Legislation and Lobbying
- Advocacy
- Evidence-based Guidelines
- Resources and Tools
- Physician Guidance (BOMA)
- Inter-professional Collaboration (CHEST, ATS, SCCM, NAMDRC, ASA, Federal Agencies)

This Is What the NBRC Does for Respiratory Care

- Credentialing
- Credential Verification
- Credential Maintenance
- Job Analysis Surveys

This Is What CoARC Does for Respiratory Care

- RT Entry into Practice Program Accreditation
- RT Degree Advancement Accreditation
- Sleep Disorders Specialist Accreditation in RT Programs
- Protects the Public Against Compromise of Educational Quality

This Is What the ARCF Does for Respiratory Care

- Philanthropic Arm of Profession
- Funds Clinical Research
- Funds Clinical Education
- Funds Research Fellowships
- Funds International Fellowship Program
- Funds Research Grants
- Hosts Journal Conferences
- Funds Undergraduate and Graduate Education Awards/Scholarships
- Funds Achievement Awards

This Is What the State Societies Do for Respiratory Care

- Local Education and Meetings
- Professional Networking
- State Legislation and Lobbying
- Grassroots Advocacy
- Liaison Between Membership and the AARC
- Lead Efforts To Protect/Expand the Scope of Practice
- Lead Efforts To Protect Licensure

This Is What Licensure Boards Do for Respiratory Care

- Protect the Public
- Issue RT Licensure
- Revoke/Suspend RT Licensure
- Gatekeeper for Scope of Practice ■

NBRC: Defined by Excellence

by Gregg Ruppel, MEd, RRT, FAARC

The National Board for Respiratory Care (NBRC) is the credentialing organization for respiratory therapists and pulmonary function technologists. Sponsored by the AARC, the American Thoracic Society, the American Society for Anesthesiology, and the American College of Chest Physicians, the NBRC has offered credentialing examinations for the respiratory therapy community since it was founded in 1960.

For most of its early history, the NBRC provided exams for credentialing therapists at two levels: the entry-level Certified Respiratory Therapist (CRT) credential, and the advanced Registered Respiratory Therapist (RRT) credential. Until about 1980, the RRT examination consisted of a written test and oral examination. The written Clinical Simulation Examination replaced the oral exam, and this format is still in use today. During the 1980s, the NBRC also assumed responsibility for credentialing pulmonary function technologists with two levels of examinations: the entry-level Certified Pulmonary Function Technologist (CPFT) credential, and the advanced Registered Pulmonary Function Technologist (RPFT) credential. In 2000, the NBRC switched from written tests to computer-based examinations and established a national network of test centers.

The NBRC has established additional specialty credentials: for therapists working with pediatric patients, there is the Neonatal Pediatric Specialist (RRT-NPS, CRT-NPS) credential; for therapists working in sleep laboratories, there is the Sleep Disorders Specialist (RRT-SDS, CRT-SDS) credential; and, most recently, for therapists working in critical care settings, there is the Adult Critical Care Specialist (RRT-ACCS) credential.

Two tests become one

Until 2015, the entry level and advanced examinations for respiratory therapists were separate tests. Candidates had to pass the CRT exam to earn that credential, and then pass a second written exam and clinical simulation exam to earn the RRT. The two written examinations have now been combined, with separate levels of cut scores established.

Candidates who achieve the lower cut score earn the CRT credential, while those who achieve the higher cut score become eligible for the clinical simulation exam to earn the RRT credential. Along with the AARC, the NBRC has promoted the RRT credential as the standard of excellence for all respiratory therapists. The pulmonary function technologist examinations have been adapted in a similar manner with two cut scores, the lower for CPFT and the higher for RPFT.

NBRC examinations and the credentials earned are the basis for licensure in 49 of the 50 states (Alaska does not yet have licensure). As most states developed their licensure regulations, the CRT credential became the *de facto* standard for a respiratory therapy license. In the last few years, a number of states have opted to require the RRT credential as the basis for a license. Having national credentials allows respiratory therapists the flexibility to relocate as needed.

Requirements are strict

As a credentialing organization, the NBRC itself is accredited by the National Commission for Certifying Agencies (NCCA). To maintain its accreditation, the NBRC complies with strict NCCA requirements for examination development and administration. NBRC exams are based on national job analyses, which are conducted on a regular basis (typically every five years for respiratory therapy). The job analyses define the tasks that are widely performed and essential to the practice of respiratory therapy, and these tasks then become the basis for the content of the examinations, assuring that they are applicable to respiratory therapists nationwide.

The 31-member NBRC Board consists of 15 respiratory therapists representing the AARC and five physicians from each of the sponsoring medical associations, along with a public advisor. This Board is responsible for the development and administration of all NBRC exams. Board members serve as "content experts" on examination committees, and they participate on standing committees that set policies by which the NBRC operates. All board members are volunteers who generously contribute their time and expertise to the credentialing process. The NBRC Board is supported by the organization's executive office staff in Overland Park, KS.

Valid and meaningful

Since 2002, NBRC credentials expire every five years, and therapists must renew their credentials by participating in the NBRC's continuing competency program. This program currently requires 30 continuing education units appropriate for the individual's credentials. A "credential maintenance" program that requires annual assessments is planned for the near future.

The NBRC is not a membership organization; rather, it is supported by an annual certification renewal fee (currently $25, or $20 if paid online). This renewal fee is applied to the cost of credential maintenance (otherwise the fee is $125 every five years). The fees for each examination, along with the annual renewal fee, provide the revenue needed for the NBRC to continue providing excellence in credentialing exams. For more information on examination eligibility criteria, and for a full list of examination fees, please visit NBRC.org.

Over the past 30 years, I have been honored to serve two terms on the NBRC Board, including two years as president. The dedication and professionalism of the volunteers who serve on the Board, as well as that of the staff, are without equal. Every time I sign my name and include my NBRC credentials, I do so with a sense of pride, knowing that the credentials are valid and meaningful. ■

CoARC and Its Contribution to Respiratory Care Education

by Tom Harding MS, RRT, RRT-RPFT

I have had the privilege of spending about half of my 46 years in our profession focusing on the education of future respiratory therapists. There have certainly been a number of significant changes in health care, as well as instructional models and educational needs during that time period.

While working in a large medical center early in my career, I became interested in the education of students aspiring to enter our respiratory care, especially when I saw the light bulb go on over their heads when they finally grasped a new technical, procedural, or conceptual subject. Since then, I have been on the faculty of three colleges as director of clinical education, program director, and dean of health sciences, a position I left upon my retirement a few years ago.

Consequently, I have had a great deal of interaction with the Commission on Accreditation for Respiratory Care (CoARC) over the years. This connection has come from both sides of the fence: as a faculty member and as a CoARC site visitor. For over 20 years, I have participated in many education program site visits as a team member and as a team captain, and I was honored last year to be presented with the 2017 Ralph Kendall MD Outstanding Site at the AARC Congress. I have always appreciated the professional support and collegial relationship with CoARC over the years. It has meant a great deal to me as an educator and as a respiratory care practitioner.

Every educational entity, whether it is a discipline-specific health care program or a college itself, must answer to an accreditation organization to ensure that what they offer students and the community of interest is viable and sound. CoARC is the organization responsible for ensuring that all programs associated with the education of respiratory therapists are effective and that they comply with approved accreditation standards and outcomes. CoARC is the organization responsible for accrediting, the organization responsible for accrediting professional practice programs in respiratory care.

The mission of CoARC is to "ensure that high-quality educational programs prepare competent respiratory therapists for practice, education, research, and service." This is extremely important to the people charged with educating future respiratory care practitioners. It is absolutely essential to have an accreditation body overseeing educational programs to ensure that students are receiving training consistent with appropriate standards, that integrity is not compromised, and that the program is achieving desired, mandated outcomes.

Over the years, we have witnessed a multitude of changes in our discipline. These changes are not only procedural or technical in nature, but also in the area of educational interaction and instructional methodologies. They include the ever-changing technical processes, procedures, equipment, and ideas associated with respiratory care. They also include offering new approaches, outcomes, methodologies, and models of education and training to best meet the needs of the community of interest.

In addition to CoARC's vital role in ensuring that educational programs adhere to approved standards, outcomes, and accreditation policies, I have always been impressed with its ability to maintain a sharp focus on current needs and trends in the respiratory care profession. Over the years, CoARC has instituted appropriate revisions to accreditation standards to address changes in the profession as well as programmatic and professional needs. CoARC has also encouraged, supported, or accepted a number of potential options to enhance and improve educational processes, program outcomes, and student accessibility. These include, but are not limited to, degree-advancement opportunities, satellite programs, hybrid courses, distance learning, online educational offerings, and advanced-practice programs in respiratory care.

CoARC recently responded to the needs of the professional community by requiring all new programs to offer no less than a baccalaureate degree in response to the increasing needs of the profession and the health care community. This much-needed programmatic enhancement was encouraged and supported by the AARC in a position statement.

Why is CoARC important to you? The answer is simple: CoARC is important to therapists because its diligent monitoring of accreditation criteria safeguards our profession, ensuring the highest standards by all educational programs. This outcome in turn helps facilitate an ongoing, reliable source of competent respiratory therapists to serve our communities and work by your side as colleagues, now and in the future. That sounds like a significant contribution to me. ■

ARCF: Supporting the Profession

by Debbie Bunch

For the respiratory care profession, the 1950s and '60s were spent building the infrastructure necessary to take the profession from a fledgling field to a significant player in the health care system. By the early 1970s, all of the major building blocks — a professional association, a credentialing body, and school accreditation — were in place, except for one. AARC leaders began looking at other health care professions and realized they all had charitable foundations designed to raise funds for everything from clinical research to scholarship.

Soon the American Respiratory Care Foundation (ARCF) was born.

Awards and more

The ARCF operates out of the AARC Executive Office in the Dallas area and is governed by a Board of Trustees appointed by the ARCF in collaboration with the AARC and NBRC. The trustees each serve four-year terms and are responsible for guiding the ARCF to fulfill its overriding mission, which is to promote respiratory health through the support of research, education, and patient-focused philanthropic activities in respiratory care.

The Foundation accomplishes this goal by supporting both undergraduate and graduate education recognition awards and scholarships for students enrolled in accredited respiratory care and other programs. Research fellowships and research grants are available as well to support research important to the profession, and the ARCF also sponsors achievement awards for outstanding members of the health care profession who have specialized in targeted areas like international respiratory care, cardiopulmonary public health, and home respiratory care. Literary awards go to the authors of the top papers published in Respiratory Care.

The ARCF also supports the scientific conferences held by Respiratory Care. These Journal Conferences delve into key components of the profession and are attended by leading respiratory therapists and physicians who hear presentations on the latest thinking in the area. Results are published in special issues of Respiratory Care.

Recent Journal Conferences have addressed issues like noninvasive respiratory support in adults, respiratory medications for COPD and adult asthma, and pediatric respiratory care. Findings from these invitation-only events often drive new technology and improve strategies for diagnosis and treatment in hospitals across the country and around the world.

Fostering international ties

The International Fellowship Program also comes under the purview of the ARCF. Established in 1990, the program brings respiratory professionals from abroad to the United States every fall, where they visit respiratory care facilities in two cities before attending the AARC Congress.

International fellows get the chance to see respiratory care, U.S. style, in action, and they often leave with a new understanding about the profession and how it could be implemented in their own countries. The International Fellowship Program, along with other international efforts on the part of the AARC, has been credited with helping foster the development of the respiratory care profession in a number of countries in Central and South America, as well as in Asia and Africa.

In countries with well-established systems for the provision of respiratory care, the program helps nurture a greater understanding between U.S. RTs and their counterparts in medicine, physiotherapy, and other professions common in Europe, Australia, New Zealand, and other nations.

The program has played a major role in putting respiratory therapists on equal footing with other clinicians specializing in the care of pulmonary patients on the world stage. That filters down to every RT working here in the United States because those international ties raise the stature of the profession as a whole.

Generous support

None of this philanthropic work would be possible without the support of the respiratory care community and our friends in industry who establish endowments for various awards and regularly contribute to the cause. These generous donations have grown over the years, serving as a testament to how much respiratory-related companies and organizations value the work of the ARCF.

The end result is a robust foundation capable of rivaling those found in other health care fields like medicine, nursing, physical therapy, and more. ■

AARC State Societies:

Taking It to the Grassroots

by Debbie Bunch

When the AARC was established back in the mid-1940s, the organization was mainly centered on a small group of "inhalation therapists" in and around the Chicago area and the physicians and nurses who supported their work.

Before long, though, the idea of having a specialty clinician to assist pulmonary physicians with the growing technology available to treat people with respiratory conditions began to spread, and the profession started popping up in surrounding states as well. The respiratory care concept mushroomed from there, until hospitals across the country and even in U.S. territories were adding respiratory therapists to their ranks.

As the profession grew across the country, so did the state societies that make up the AARC. Every domestic member of the AARC today is also a member of his or her state society. A revenue-sharing program with the national office of the AARC helps fund their individual projects and programs.

Activities run the gamut

The organization and operation of the state societies is governed by the individual members of those societies, but for the most part they elect their leaders in a manner similar to that at the national level, with a group of officers, including a president, vice-president, secretary, and treasurer, serving with board members who represent either the society as a whole or various districts within the society. Each society sends delegates to the AARC House of Delegates.

These state societies have local chapters as well, giving respiratory therapists everywhere the chance to go to a meeting or take part in an educational event close to home. The activities they get involved in run the gamut. A number of state societies host annual legislative days in their state capitals, ensuring state legislators have the opportunity to learn more about respiratory care and how it benefits patients. The California Society held their annual event on Feb. 6, focusing on a bill in the state senate to amend the California Respiratory Care Act to allow the Respiratory Care Board to adjust regulations to keep pace with the advancing profession. More than 130 RTs attended the event.

Continuing education is also a key component of the state societies, with nearly all of them hosting annual conferences and many holding other events throughout the year. The Alabama Society is taking continuing education on the road this year with a Road Show Program that will deliver continuing education to all areas of the state. Attendees earn 6.0 hours of CRCE to help them keep their state licenses current.

Other state societies get out into their own communities to support respiratory health initiatives. The Kentucky Society is now a member of the Coalition for a Smoke-Free Tomorrow, a statewide coalition dedicated to reducing tobacco use and protecting Kentuckians from the dangers of secondhand smoke. In Iowa, members regularly participate in American Lung Association events like the Fight for Air Climb and the Lung Force Expo.

The Missouri Society actively involves the next generation of RTs through a Student Liaison Program that selects two students each year to sit as non-voting members of the MSRC board of directors. It's a win–win situation, as the students learn what it takes to operate a state society, and today's leaders know they are helping to groom those coming up the ranks.

The state societies also host Sputum Bowl events, with winning teams advancing to the National Sputum Bowl at the AARC Congress. They offer mentoring programs for students and new practitioners, and they host their own web sites so that everyone in the state can remain apprised of state-level activities throughout the year.

Strength in numbers

The AARC state societies are a vital part of the respiratory care profession. The ideas generated at their meetings and educational events filter up to the national organization through the delegates they send to the AARC House of Delegates. Delegates share best practices with their colleagues in the House and ensure their constituents' concerns about the direction of the profession and the national organization are heard in House meetings. The House then works with the Board of Directors and the Executive Office to address those concerns. Without these grassroots organizations, the profession would lack the strength that can only come when everyone's voice is heard. ■

State Licensing Boards:

Protecting the Integrity of the Profession

by Debbie Bunch

For the first 30–35 years of the respiratory care profession, clinicians were not licensed to practice in their states. Despite the fact that other professionals with far less at stake in the realm of public safety (think hairdressers) were licensed, hospitals could hire anyone they wanted to perform respiratory care.

All that began to change in the late 1970s and early 1980s, when leaders in the AARC decided to mount a concerted effort to pass licensure laws across the country. The Association's legislative team prepared resource materials and documentation detailing the respiratory care profession's scope of practice that the state societies could take to their legislatures in support of bills aimed at providing legal credentialing for respiratory therapists to help protect public safety. The state societies rose to the occasion, meeting with key legislators to advance the concept of a respiratory care license.

The idea took off, with California becoming the first state to pass licensure for RTs in 1982. Other states followed suit over the ensuing three decades; in 2010, Hawaii became the 49th state to pass licensure for RTs (Alaska remains the only state without licensure).

Operated by the states

With state licensure came state boards of respiratory care, which are operated by the individual states to oversee the licensure process. These boards issue licenses to qualified RTs who pass the NBRC exam required by the state, take in any complaints from the public that may result in a license being revoked, revoke licenses when necessary, and they generally have the power to make changes to respiratory practice legislation through rules, regulations, and advisory opinions.

Most boards are made up of representatives from the profession, along with those from the health care industry and the general public. State law defines the specific make-up of the board. Board members are generally appointed to these positions by the governor of the state and serve defined terms in office.

The fees charged to acquire a license to practice respiratory care are set by the state, as are the renewal period and the continuing education requirements to maintain that license to practice. The state boards operate web sites where applicants can find the forms and other information they need to apply for a license in their state.

Vital component

Licensure is a vital component of the respiratory care profession because it protects the public against unqualified clinicians. The days when anyone could walk into a hospital and be trained to be an RT are long gone, and today's patients can take comfort in knowing that the person who is manipulating the dials on the breathing machines that are keeping them alive have been formally educated and tested to ensure they have the knowledge necessary to safely and appropriately carry out that assignment.

Your state license also speaks volumes about *you* as a professional, making sure you on a level playing field with other health care providers like physicians and nurses, who have long held a professional license to practice. ■

Industry Update

Featuring information on products and equipment from manufacturers

RC Currents

IN THE NEWS

AARC 2018 Open Forum Abstract Submission Deadline Is June 1, 2018

RESPIRATORY CARE®

The AARC Open Forum offers you the opportunity to contribute to the scientific basis for respiratory care. The deadline for submission of abstracts to be presented in the Open Forum at the AARC Congress in Las Vegas, NV, Dec. 4–7 (Tuesday–Friday) is **June 1, 2018** (no extensions). You can submit your abstract now at Abstract Central at https://aarc2018.abstractcentral.com.

Abstracts are peer reviewed and Respiratory Care, the AARC's science journal, will email the contact author about whether the abstract was accepted no later than Aug. 20, 2018. Accepted abstracts are automatically considered for American Respiratory Care Foundation[sm] fellowships.

Accepted Open Forum abstracts will be published online in conjunction with the October 2018 edition of Respiratory Care. ■

Share Your Wisdom

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 or some aspect of it and tell us what it meant to you and why. Funny, sad, inspiring — the door is wide open! So start brainstorming some ideas and then submit your story to *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org ■

Tell Your Story

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

NBRC Insight: How To Properly Use Your NBRC Credential(s)

As a respiratory care professional, you spend a tremendous amount of time and effort to earn your national credentials, and the National Board for Respiratory Care (NBRC) wants to ensure the continued value and meaning of the credential acronyms associated with your hard work. The NBRC's credential designations are federally registered (trademarked) and, accordingly, must be used in the manner in which they were registered. Legally, only those individuals who have passed the respective examinations are authorized to use the credential acronyms.

The NBRC has policies in place to ensure those who misuse or misrepresent themselves using the federally protected designations are disciplined appropriately. But even more importantly, it is essential that the designations be used properly by those who have earned the right to use them so that the NBRC can continue to uphold and renew its federal registrations on them.

The proper use of each credential is:

- ☐ CRT: Chris Smith, CRT
- ☐ RRT: Chris Smith, RRT
- ☐ CPFT: Chris Smith, CPFT
- ☐ RPFT: Chris Smith, RPFT
- ☐ NPS: Chris Smith, CRT, CRT-NPS or RRT, RRT-NPS
- ☐ SDS: Chris Smith, CRT, CRT-SDS or RRT, RRT-SDS
- ☐ ACCS: Chris Smith, RRT, RRT-ACCS
- ☐ Multiple credentials: Chris Smith, RRT, RPFT, RRT-NPS, RRT-ACCS

It is important to note that NBRC credentials are not punctuated with periods.

Additionally, general guidelines have been established for how all academic and professional credentials should be used and listed. An education degree is listed first (highest degree listed first for multiple degrees) as it is a "permanent" credential that can't be taken away except under extreme circumstances. Licensure and state designations or requirements are listed next, as they are required to practice in your chosen profession. Lastly, national certification is sometimes voluntary, and awards, honors, and other recognitions are always voluntary, so these are listed at the end. If multiple certifications are earned, the most recently earned is usually placed last.

- ☐ The appropriate order to list academic and professional credentials is:
- ☐ Highest earned degree
- ☐ Licensure
- ☐ State designations or requirements
- ☐ National certifications
- ☐ Awards and honors
- ☐ Other recognitions

Please help the NBRC continue to ensure the value and meaning of your national credentials and do not allow misuse to undermine the importance of the recognition(s) you've worked hard to earn. ■

NBRC

AARC Times Is Still Looking for Medical Mission Stories

We know many AARC members have reached beyond American borders. Now we're hoping you will share your stories with the rest of us through an article in our December *AARC Times* international issue. We are beginning to collect medical mission stories, and the submission deadline is **August 1.**

Preference will be given to submissions describing respiratory care activities of volunteer RTs on medical missions. AARC members who have a medical mission story to share with their colleagues can email *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org and place "Medical Mission" in the subject line. ■

Stem Cell Therapy for COPD on the Horizon

Stem cell therapy may offer hope for people with COPD. Pennsylvania investigators recently discovered a new subset of stem cells called alveolar epithelial progenitor (AEP) cells that quickly expanded after lung injury and restored alveoli tissues in mice infected with the flu virus. From there the investigators isolated human AEP cells and found they also had cellular markers that identified them as progenitors of alveoli cells, similar to what was found in the mouse model.

A gene pattern analysis revealed that mice and humans share 35.6% of the enriched genes, suggesting that these cells are conserved between species. The study was published in a recent edition of *Nature*. ■

Transitions
In the lives of AARC members

Contribute to Our "Transitions" Column

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

Using Big Data To Tame *Haemophilus influenzae*

The bacterium *Haemophilus influenza* is known to be particularly dangerous for people with COPD. U.S. researchers are harnessing the power of big data to better understand how the bacterium adapts quickly, which may open new avenues of therapy for COPD patients.

The team was especially interested in finding out why some strains of the bacterium are more deadly than others, noting that lethality depends in part on which genes are turned on and which are turned off. Using data mining, they detected certain patterns of genetic activation or inactivation and believe they may be able to develop new treatments and new vaccines from these results. The research was published in a recent edition of the *Proceedings of the National Academy of Sciences*. ■

Immunotherapy Trials Appeal to Caregivers of Kids with Food Allergies

In a new study conducted among 369 caregivers reporting on 420 children, researchers from Ann & Robert H. Lurie Children's Hospital of Chicago found that more than 92% expressed an interest in enrolling their child in a clinical trial for immunotherapy. Seventy percent thought their child would be interested in such a trial as well. Why? The investigators note food allergies that could cause a severe allergic reaction are stressful for caregivers and kids alike.

"Families of children with food allergies live with constant stress that their child might accidentally get exposed to an allergen and have a life-threatening reaction," noted senior author Ruchi Gupta, MD, MPH. "Their willingness to participate in a clinical trial that would expose the child to the allergen demonstrates how urgently these families desire new therapies for food allergies."

Caregivers in the study said they hoped immunotherapy would allow their children to eat their allergen freely, without experiencing an allergic reaction. However, around 25–30% of those whose children were allergic to peanuts, tree nuts, and shellfish emphasized that protection from accidental exposure would be their desired outcome of immunotherapy. The study was published in a recent edition of the *Annals of Allergy, Asthma and Immunology.* ■

Quintupling Maintenance Steroids Falls Short

The common practice of quintupling inhaled steroid doses during the earliest signs of an asthma attack may not work in children with mild-to-moderate asthma, report Ohio researchers publishing in a recent edition of *The New England Journal of Medicine*.

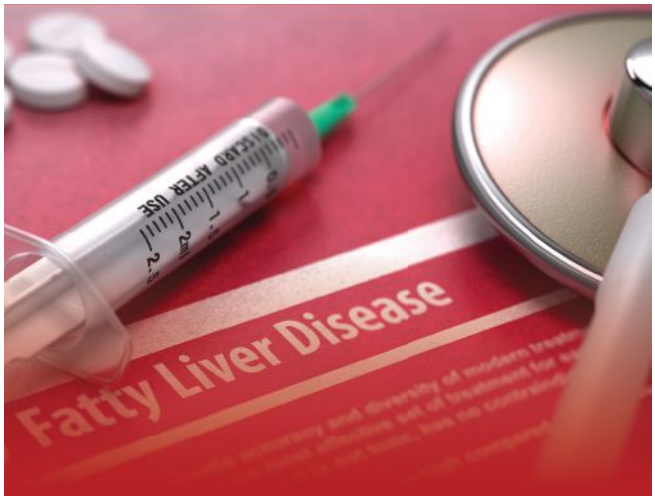
All 254 children in the randomized, double-blinded study used low-dose controller inhalers at a dose of two puffs twice daily. When parents noticed their child had yellow-zone symptoms, they were instructed to use a different inhaler for seven days. Half of the inhalers were the same low dose, and the other half contained five times the maintenance dose. No significant difference in the number of asthma attacks that ultimately required systemic steroids was seen across 395 yellow-zone episodes. Despite a 16% increase in exposure to inhaled steroids, children in the high-dose group did not experience fewer attacks.

The authors emphasize that the study did not include children with severe or uncontrolled asthma and stress that these children should continue to work with their health care providers to find the best way to intervene when yellow-zone symptoms appear. ■

Raising Tobacco Purchasing Age Didn't Have the Intended Effect

UCLA researchers publishing in a recent issue of the *American Journal of Public Health* shared disappointing news on New York City's new policy to raise the age to purchase tobacco products from 18 to 21. While there was a small drop in adolescent tobacco use in the city after the change, it didn't accelerate the decline of tobacco use when compared with the rest of the state, where the minimum age to purchase tobacco products remained at 18.

E-cigarette use increased after the policy went into effect, and the purchase of loose cigarettes remained the same. The researchers believe that uneven policy implementation, enforcement, or compliance may be to blame for the lackluster results and suggest that other cities and states thinking about raising the age to purchase tobacco products take those factors into consideration as they implement their new policies. ■



E-Cigarette Use Linked to Fatty Liver Disease

Here's another reason why e-cigarettes may not be safe: people who use them may be building up dangerous fat in their livers.

That was the conclusion of researchers who studied the effect of e-cigarette use in mice missing the gene for apolipoprotein E, which makes them more prone to developing heart disease and fat in the liver. All of the mice were fed a diet relatively high in fat and cholesterol. One group was placed in a chamber that exposed them to e-cigarette aerosol, so that their blood nicotine levels were similar to that of smokers and e-cigarette users. A second group of mice were exposed to saline aerosol.

The researchers took liver samples from the mice exposed to e-cigarettes and, using a technique called RNA sequence analysis, found changes in 433 genes that were associated with fatty liver development and progression. The researchers also found that genes related to circadian rhythms were changed in mice exposed to e-cigarettes. Circadian rhythm dysfunction is known to accelerate the development of liver disease, including fatty liver diseases.

"Our experimental results will provide support to policymakers and federal and state regulatory bodies to take preventive measures to stop the increasing use of e-cigarettes among both children and adults," said study author Theodore C. Friedman, MD, PhD, from the Charles R. Drew University of Medicine & Science in Los Angeles, CA. The study was presented at the annual Endocrine Society conference earlier this year. ■

Toxic Organic Compounds Found in Urine of Kids Who Vape

E-cigarettes expose teenagers to many of the same chemicals found in traditional cigarettes, say investigators from the University of California San Francisco, who analyzed urine samples from 84 kids with an average age of about 16. Sixty-seven used e-cigarettes alone, and 17 used both e-cigarettes and traditional cigarettes. These kids were compared with a control group of 20 non-smoking teens.

Levels of toxic organic compounds were up to three times higher in the e-cigarette users compared with the controls. In teenagers who used both e-cigarettes and tobacco cigarettes, levels of toxic compounds were up to three times higher than in those who only used e-cigarettes. "E-cigarettes are marketed to adults who are trying to reduce or quit smoking as a safer alternative to cigarettes," explained study author Mark L. Rubinstein, MD. "While they may be beneficial to adults as a form of harm reduction, kids should not be using them at all." The study was published in a recent edition of *Pediatrics*. ■

Study Finds No Link Between Tamiflu and Pediatric Suicides

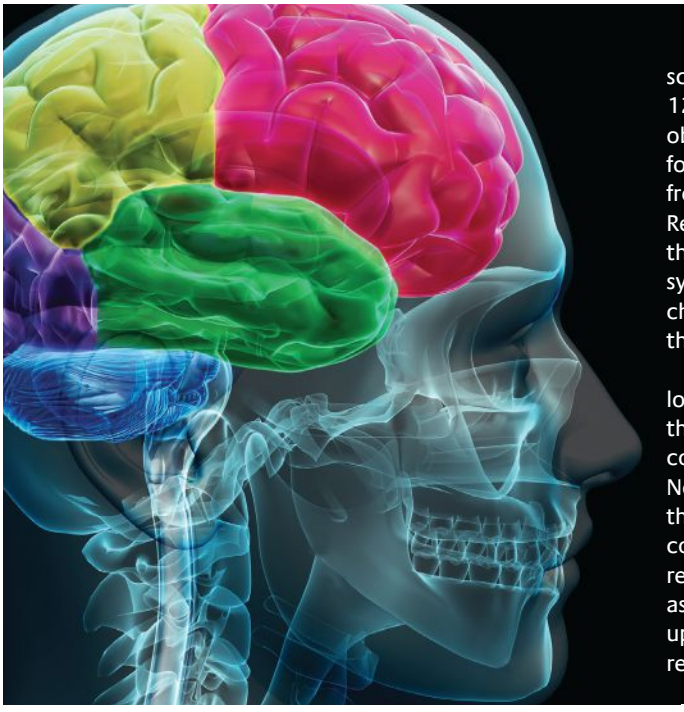
In response to reports of abnormal behavior in adolescents taking Tamiflu, the FDA added a warning to the drug in 2006 stating it may cause neuropsychiatric side effects, such as hallucinations, delirium, self-harm, and even suicide.

Researchers from the University of Illinois at Chicago question the link between the drug and suicide. In a retrospective cross-over study of 21,047 children between the ages of 1 year and 18 years who attempted suicide during five recent flu seasons, they found 251 who were exposed to Tamiflu. The mean age of this group was 15 years, 61% were female, and 65% had an underlying mental health diagnosis.

The investigators then assigned the 10-day period immediately before the suicide attempt as the case period in each of the 251 cases and identified up to four earlier control periods of the same length, in the same flu season, to account for within-person confounders such as depression, mental health, trauma and abuse, and other factors like race or ethnicity. Then they repeated the analysis with flu diagnosis alone, without the use of Tamiflu, to see if the infection itself could have been a confounding factor associated with suicide risk. No association was found between exposure to Tamiflu and suicide in pediatric patients.

The authors still believe physicians should be cautious when prescribing Tamiflu for kids, however, noting that their study did not address other neuropsychiatric side effects of the drug. They plan to look at those side effects in future studies. This study appeared in a recent edition of the *Annals of Family Medicine*. ■

Cortex Thinning Found in People with Sleep Apnea



Using high-resolution magnetic resonance imaging scans, UCLA researchers examined cortex thickness in 12 women and 36 men diagnosed with mild to severe obstructive sleep apnea who were not yet being treated for the condition. Their scans were compared to those from 22 female and 40 male controls, respectively. Results showed several apparent connections between thinning of the brain's cerebral cortex and apnea symptoms, and the investigators also found distinct changes in brain structures and concurrent symptoms that differed between men and women.

For example, more regions of the superior frontal lobe were thinner in women with apnea than men or the controls, which could help explain the enhanced cognitive deficits seen among women with the disorder. None of the sleep apnea patients had a thickening of the cerebral cortex. The researchers suggest overall cortical thinning could possibly lead to impaired regulation of the autonomic nervous system and associated impaired breathing function through the upper airway in these patients. The study appeared in a recent edition of *PLoS ONE*. ■

Biomarker Predicts BPD

U.S. researchers have discovered what they believe is a strong predictive biomarker for bronchopulmonary dysplasia (BPD) in preterm infants. The finding could open the door to new therapies to prevent or minimize the impact of the condition.

The study began by examining exosomes obtained from tracheal aspirates of infants with severe BPD and comparing them with those from full-term controls. They found that airway cells in infants with severe BPD had greater numbers of exosomes, but they were smaller in size. They also found that high oxygen exposure in newborn mice or human bronchial epithelial cells grown in culture caused the release of more exosomes, and that these exosomes were smaller in size than those secreted at normal oxygen levels.

From there the investigators collected tracheal aspirate samples from extremely premature infants within six hours of birth, purified exosomes from the samples, and looked for microRNAs in the exosomes. Out of 810 microRNAs that were found, 40 showed differences between infants who later developed BPD and those who were BPD-resistant.

The investigators went on to study microRNAs in other models, concluding that exosomal microRNAs have critical and causative roles in neonatal chronic lung disease pathogenesis. The study appeared in a recent edition of *JCI Insight*. ■

Genetic Mutations Caused by Heart Disease Not a Major Cause of SIDS

In what is believed to be the largest genetic investigation into sudden infant death syndrome (SIDS) to date, an international group of researchers has found that heart disease-associated genetic mutations account for roughly 5% of SIDS deaths — significantly fewer than the 20% suggested by previous studies.

"Through this research, we now know that the vast majority of SIDS cases do not stem from genetic heart diseases," noted study author Michael Ackerman, MD, PhD, from the Mayo Clinic. "We now are turning our attention to the genes implicated in other organ systems, like the brain, to determine their potential contribution."

The investigators are also exploring other genetic contributions to SIDS in the belief that most SIDS cases are not the result of a single genetic cause. The study appeared in a recent edition of the *Journal of the American College of Cardiology*. ■

Third-Hand Smoke Causes Lung Cancer in Genetically Susceptible Mice

Third-hand smoke, defined as the toxic residues that linger on indoor surfaces and in dust long after a cigarette has been extinguished, has been linked to lung cancer in mice.

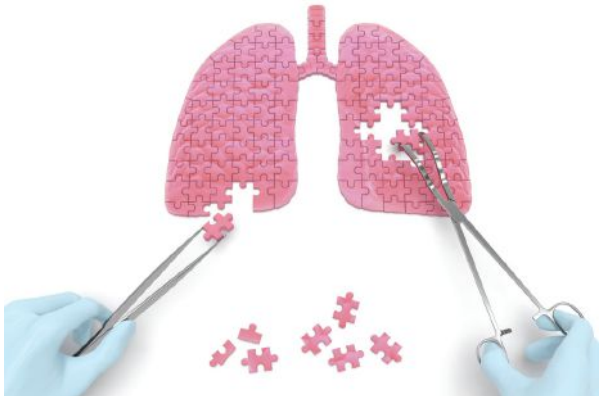
The finding comes from investigators at the Department of Energy's Lawrence Berkeley National Laboratory, who studied an experimental cohort of 24 mice bred to be susceptible to spontaneous lung cancer development. The mice were housed with scraps of fabric impregnated with third-hand smoke from the age of four weeks to seven weeks. The dose the mice received was estimated to be about 77 µg/kg of body weight per day — comparable to the ingestion exposure of a human toddler living in a home with smokers. Forty weeks after the last exposure, these mice were found to have an increased incidence of lung cancer, larger tumors, and a greater number of tumors, compared to 19 control mice. The researchers published their findings in a recent edition of *Clinical Science*. ■

Building a Better Antiviral

A study presented at the recent American Chemical Society conference suggests that tweaking a small-molecule drug may lead to a more effective antiviral treatment for influenza. The researchers focused on the specific viral process used by the flu virus to replicate.

Study author Seth Cohen, PhD, from the University of California San Diego, explained that one of the major targets has been a particular RNA polymerase subunit that the virus uses. "It is a nucleic-acid processing protein that is required for the life cycle of the virus." The subunit relies on two manganese ions to initiate the replication of the genetic information. The team modified its small-molecule drug so that it would bind to both manganese ions simultaneously, then tested the molecule on the RNA polymerase protein. "The modification dramatically improved the potency of the compound over previous drugs we created," Dr. Cohen continues. The team is hopeful that it will be just as effective when they challenge the whole influenza virus with the molecule. ■

Restoring Lipids Might Treat Pulmonary Fibrosis

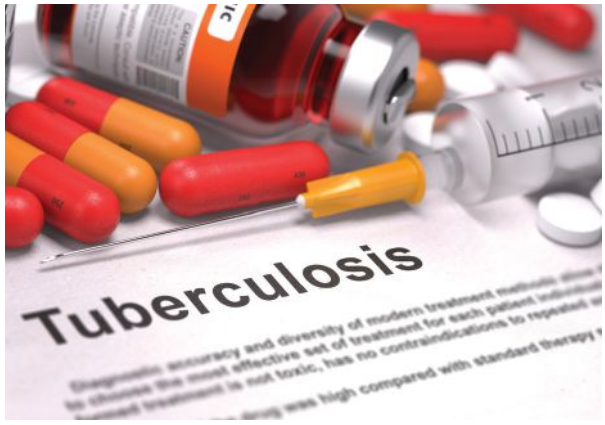


Could restoring lipids in the lungs of people with pulmonary fibrosis be an effective treatment for the condition? Researchers from Thomas Jefferson University raised that possibility in an animal study published in the *American Journal of Respiratory Cell and Molecular Biology*.

The investigators began with a drug that inhibited lipid production in the lung, finding that it alone was capable of instigating lung fibrosis. But when they increased lipid production in the lungs of the affected animals, lung scarring was reduced by 70–80%. The team is now working on a therapy aimed at restoring lipid production in the lungs of people with pulmonary fibrosis. ■

Short Course of TB Treatment Works in HIV Patients

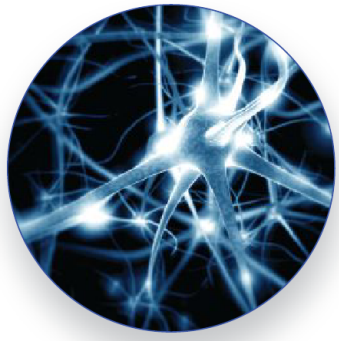
University of Nebraska researchers found that a one-month treatment was just as effective as the standard nine-month treatment for preventing tuberculosis in people with HIV. The short-course treatment consisted of daily doses of the antibiotics rifapentine and isoniazid for four weeks. Standard treatment calls for a nine-month regimen of daily isoniazid. Ninety-seven percent of those assigned to the short-course therapy completed the full antibiotic course vs. 90% of participants in the nine-month arm. The study was presented at the 2018 Conference on Retroviruses and Opportunistic Infections held earlier this year. ■



Strange but True…

One step back? While a new study from Duke Health found three out of four Americans agree that smoking a pack of cigarettes a day is bad for your health, that number is actually declining. Between 2006 and 2015, it decreased by 1%. Amazingly, there are more than three million additional people out there today who don't think smoking a pack a day is harmful.

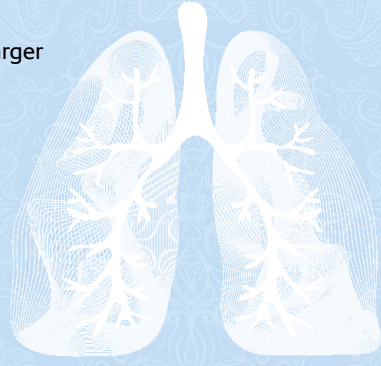
Catch some rays: Too much sun can cause skin cancer, but new research suggests getting just a little extra during August and September might actually ward off the flu. University of Kansas researchers found states experiencing sunnier months in August and September between 2008 and 2011 had fewer cases of influenza in those years. Why? People got more of the immune boosting vitamin D.



The nerve! Harvard investigators working in a mouse model have found that neurons carrying nerve signals to and from the lungs suppress immune response during infection with *Staphylococcus aureus.* They believe targeting the nervous system might be a novel way to boost immunity in people with recalcitrant bacterial infections.

Gasping for breath: We all know a bottle of wine needs a chance to breathe to be at its best. So do the grapes that go into it, say Australian investigators. They found that the level of oxygen shortage closely correlated with cell death in grapes, and they suggest that this process is worsened by high temperatures during ripening. ■

Lung Stiffness Varies by Age



Studies looking at the effect of aging on the lungs have mainly focused on the larger arteries, where stiffening has been associated with reduced function. New research suggests stiffening of the smaller pulmonary blood vessels comes into play, too.

Using an atomic force microscope, the investigators measured the level of stiffness of the blood vessels, airways, and parenchyma in the lungs of donors aged 11 to 30 years and those aged 41 to 60 years. Stiffness varied significantly across anatomical compartments of the lung, with stiffness being highest in the airways and lowest in the parenchymal regions. The older group showed consistently higher levels of stiffness in all areas compared to the younger group. The authors believe a better understanding of age-related variability in lung stiffness could lead to new treatments for lung disease. The *American Journal of Physiology-Lung Cellular and Molecular Physiology* published the study earlier this year. ■

Calendar of Events

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Space Coast Cardiopulmonary Conference
Contact: fsrc@fsrc.org or www.fsrc.org

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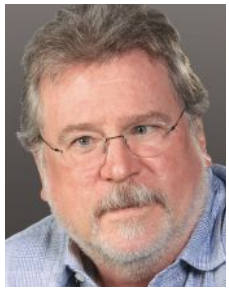
Countdown to Retirement

by Chip Woods, RRT

In April 1976, I sat in my car and looked at the newly completed tower section of what was then the Columbus Children's Hospital, and I promised myself I would work there someday. I achieved that goal on March 20, 1989, when I went to work as a Registered Respiratory Therapist in their pediatric ICU. I retired from that hospital on Dec. 15, 2017. I decided to keep a journal to document my final days in the hospital. This is how it went.

about the author...



Chip Woods, RRT served in the H-8 pulmonary unit at Nationwide Children's Hospital in Columbus, OH, until his retirement late last year.

Day 39: Retire. What does that mean? There have been several horrible hurricanes this fall, so maybe it is like that, the feeling of waiting for something to come but not very sure what to expect. It feels a little like standing on the edge of an abyss and stepping into the void. Even though I am choosing to do this, it seems unreal.

My wife and I are prepared for me to step down, to become a house husband and pursue my hobbies of music, writing, and photography. I announced to my wife that my new full-time job is to get my body into shape. I'm going to be one of those gray-haired guys at the gym early in the morning. Luckily it is close by — I might even walk!

I have written to human resources and my manager to let them know that I am planning to retire. Human resources wants to go over my retirement package with me. My wife and I are going to meet with them this Friday. Then stuff starts to get real!

Day 38: Just another day on the ranch. No reflection time today.

Day 37: Working in a children's hospital has its high notes and low notes. We are full today and have been for a week or so. I guess the summer slows are over. I now work on a pulmonary unit. Our patients are mostly cystic fibrosis (CF) and wheezers. We do have complex-care children as well. Most of them are delayed, and about half have trachs but are not on night-time ventilation.

Day 36: She is only seven and has, over the last few years, adopted me in a grandpa kind of way. I am one of the privileged few not to receive her full-out grumpiness and foul moods. Somehow, I got in. Whenever she sees me, she calls out my name with a hearty wave and smile. She tells me she misses me when I have been off, and she likes to get hugs. Today she is riding a big wheel with physical therapy, and she calls my name each time she passes. I have to figure out a way to let her know I probably won't be here when she comes to see us next time. She has CF and comes in two to three times a year. She is here now getting a port, but we had to help her improve her pulmonary function before surgery. She requests me and I request her.

Day 35: Very busy with nonstop therapies. Talked to the mother and father of my adopted grandchild and told them of my plans to retire. Mother just looked at me and said, "I wondered when it would happen." We decided not to tell her now. They will tell her on their next visit if I am gone. I ran across our medical director as I was finishing up. I called her name, and as she turned to face me, I told of my plans to retire in December. She stopped for a second, then looked up at me and said, "We've sure made a good run of it, haven't we?!" I got a hug.

Day 34: Saw one of our adult pulmonary attendings today. I had been trying to talk with her for a week, and I

Now that he's retired, Chip Woods is spending a lot of quality time in the music studio he built in his home.

finally caught up with her. I extended my hand and said, "I am retiring in December." And smiled. She paused and said, "No you're not!"

Day 33: My little friend has gone home. Her parents will explain my absence on the next admission. They both wished me well on this next part of my life. I will miss being her favorite. It's still crazy busy at work. Non-stop stuff going on here! I was asked about my "Retirement Tea" today. We asked for Dec. 12. My wife is not coming. She said it would be too sad. I get it.

Day 32: Relief! We got a float from the PICU. I have four patients today instead of six!

Day 31: I keep running into people that I used to work with. Most can stop and talk, others cannot. They go by in a flurry, arms waving, smiles passing. Those who do stop, I tell, with a smile, that I will be retiring in December, and they tell me it's well earned and wish me the best. They always ask what I will do with my time. I explain to them that I am a "hobby guy" and have many options.

Day 30: Got the final confirmation for my hospital-wide party. One hour, Dec. 12, at 15:00. I get to keep the cake that's left over — it's a win!

Had a new family, along with their apprehensions, today. You learn how to read the room. It's like being on stage. You have to determine at what level to speak and, sometimes, whom to speak with. It's an art for sure. I have gotten pretty good at it. Calmed them down in a couple of minutes. Onward through the fog!

Day 29: Got an email telling us the next electronic schedule was available for sign up. It is from November through December. My schedule ended after Dec. 15. Looked like the white abyss.

Day 22: I was notified that there will be a formal picture-taking session set up in the near future. Sounds fun!

One of my CF buddies was admitted last night. He's 20 years old and already an AND (allow natural death). Hard to see him sometimes.

Day 17: All of the arrangements have been made. Had my picture taken. I know some of the guys in the photo lab. I had hoped it would be Dan, whom I have known for over 20 years. I went to him when I was finally able to get a really good digital SLR camera — you know, the kind where you can change lenses.

Day 11: Been away for a week and returned to the news that one of our CF patients passed while I was gone. She was 19.

Day 6: Now it is just the waiting. I continue to say goodbye to patients whom I will no longer see. I tell them to be good to themselves and I will do the same.

Retirement Party: I came in for it. Got there early, when the room was being set up. Soon my boss came in and sat with me. We talked small talk, then several more people came around, and we all got up and walked to the room. The time passed quickly. I didn't even eat any cake. I talked nonstop the entire hour. So many people, so many laughs and memories. Then it was quiet. I looked around and almost everything was packed up. I had asked my boss to stay with me for several reasons, but I mainly just wanted company to walk with to the parking garage. I got to take the leftover cake home, and some peanuts, too!

Day 3: I brought in most of the leftover cake in this morning. It was more than I needed. At least that's what my wife said! It has been really busy. Today my little friend was back. Came in last night. I got to her room just before 9:00. She called my name as I entered. I asked her why she was back so soon. "I hate CF," she exclaimed. "Me, too," I replied. "Let's work on it!" When we finished I told her I would be back around one. She looked up at me and said, "Goodbye, Chip," then returned to her iPad. After her 13:00 treatment, she told me her parents had told her I was leaving.

Day 1: They had another party for me. It was small but nice. I saw my little friend at 13:00. I gave her parents an email address for me.

My last patient was also someone I have become close to. He is 47 and has CF. We talked about our relationship here in the hospital. I now can become friends with him on social media. I want to go visit him in the spring.

After I retired, I got an email from my little friend. She was back in for another virus. I told her to continue to work hard and always do her vest treatments and take all of her medications. I told her I would write again soon and that I hoped she got better really fast. She wrote back: "Awwww, thanks, Chip. I'm a little better but still sick, sadly. But I know that me and you will make it out. I'm going to have a happy life no matter what…I love you as a friend." ■

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