AARC Times
An Official Publication of the American Association for Respiratory Care
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Ready to Roll: RTs Recap Their Roles in Disaster Response

How To Prepare Before Disaster Strikes

"The secret is out!"

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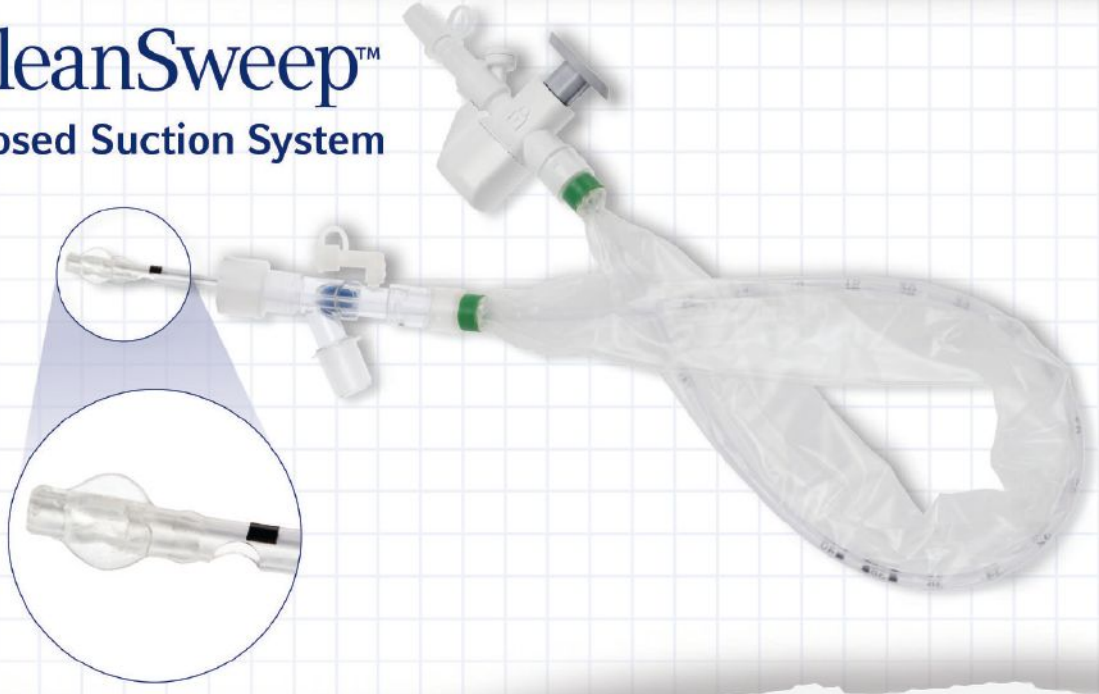
Closed Suction System



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- Stays in-line for up to 72 hours[1]

Balloon sweeping technology has been shown to **decrease mechanical airway resistance[2]**

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References:

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

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Table of Contents

August 2018
Volume 42, Issue 8

AARC Strategic Plan

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

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

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

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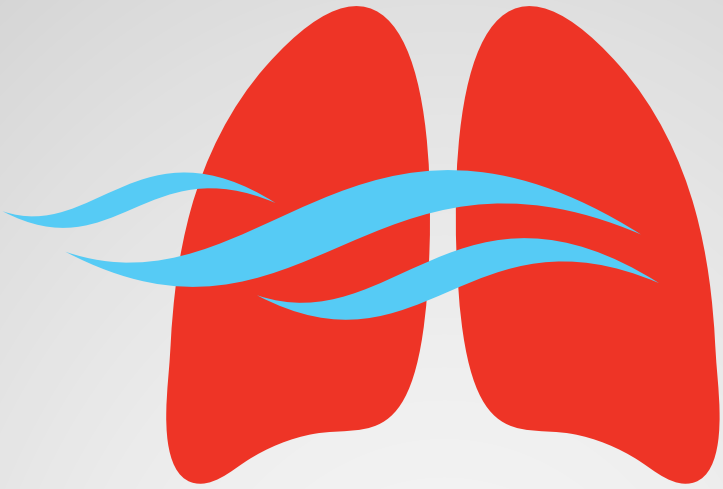

Breathing

MATTERS

GENERATE

AWARENESS

CELEBRATE RESPIRATORY CARE WEEK

OCTOBER 21–27, 2018

Now is the time to start planning for Respiratory Care Week and to be a leader for driving awareness. Join the nation's respiratory therapists in forming community events and recognition for star performers.

Visit the RC Week webpage: http://c.aarc.org/go/rc18 for a planning guide, gifts and more!

Chronic Disease Manager

How the RT Can Help Home Oxygen Patients Prepare for Emergencies and Electrical Outages

by Cynthia Gray, BS, RRT-RPFT

The recent natural disasters have increased the need to be fully prepared to assist patients with their medical need for oxygen. Accrediting agencies with Medicare deemed status have created specific standards to address emergency preparedness. Emergency plans are created for the company's specific area of vulnerability. Plans are practiced yearly with an evaluation to demonstrate effectiveness in caring for the company's patient population.

How prepared are you and your staff for an emergency? As an RT, preparing for the emergency that you hope never happens is the key to your patients' success. Begin by determining what emergencies are most likely to occur in your service area: tornados, hurricanes, ice storms, flooding, frequent power outages, fire, snow, earthquakes, and so on. Anything that could interrupt service for your patients should be considered. The next thing you should know is whether utility companies in your area have a list of priority clients that are serviced first. If so, how do patients get on that list? Assisting your patients with the paperwork for priority utility service as early as possible in the event of service interruption is crucial. Contact your local utility companies for information on the priority list.

If the home medical equipment (HME) provider's office is destroyed or inaccessible, what plan does your organization have in place to service patients?[1] A list of all patients who require around-the-clock oxygen should be easily accessible to all on-call staff. Ensure the organization has an emergency call tree or other means to contact all staff and HME providers. In addition to your primary HME partners, there should be contracts with distributors or other HMEs for emergency oxygen when needed. The organization should conduct mock drills at least annually to test the plan and determine any improvements that could be made. Preparation is the key to success in an emergency.

about the author...

Cynthia Gray, BS, RRT-RPFT, has worked in hospitals and home care for over 30 years. She currently serves as an accreditation corporate surveyor for the Accreditation Commission for Health Care.

Preparing your patient

Everyone hopes that an emergency will never happen, especially your patients. Most patients are inundated with information the day they are discharged from the hospital. They are instructed on medications, follow-up visits, and medical equipment. Most oxygen patients are exhausted by the time you arrive at their home to complete the medical equipment setup. For this reason, it is extremely important to have a family member present while educating the patient. Talk with your patients to find out what kind of support they are likely to have in the event of an emergency. Education on the equipment is just the beginning. Your patients should have a plan in case their electrical power is out for an extended length of time. Generators may be the best alternative in areas where frequent outages are possible. If possible, prior to discharge, fill out paperwork to put your patients on a priority list for faster repair of electrical service. Waiting until your patients need electrical service is too late.[2,3,4]

Providing oxygen tanks for a short amount of time is reasonable. Most home medical equipment (HME) companies provide the patient with three times the maximum response time. When a power outage is extended to days, weeks, or even months, alternative plans must be initiated. RTs can be a key resource for patients if that should occur. Patients and their caregivers can plan ahead and be prepared for alternative living arrangements if extended outage is a possibility. This allows them the opportunity to evacuate quickly if needed and to contact their HME company to arrange

equipment delivery to a new location. Consider helping patients document this emergency plan. In an emergency, a documented plan is easier to follow than trying to remember what was discussed. If your patients have a portable concentrator, stress the importance of always keeping it fully charged. In the event of a probable disaster, consider contacting your HME provider for the use of a portable concentrator. Multiple alternatives should be considered. Large power outages will drain recourses quickly.

RTs have a great opportunity to help patients understand that early action is imperative. If your institution is alerted about an impending disaster, act early. If the power outage isn't expected to be lengthy, request additional oxygen tanks for your location. Patients who need oxygen are not able to move quickly and need time to rest between actions. If you receive an alert that may require evacuation of current residents, oxygen tanks should be loaded into vehicles to be ready ahead of the evacuation order. If early notification is given, the HME company must be notified to set up equipment at the alternate living location. Ensure the new address is given to the HME company.

What exactly is a "ready bag"? Patients should have a bag that is always packed and ready with all the information that would be needed if a patient needs to leave their home with little notice. RTs can help patients get their ready bag prepared. What is needed in a ready bag?

Copies of all prescriptions for all medications, including HME equipment.

- A few days' supply of medication
- List of all current medications
- Copies of all prescriptions for all medications, including HME equipment
- Emergency contact information of family/friends
- Emergency contact information of HME provider
- Physician and caregiver contact information

Several disasters in recent years have left patients without the supplies and equipment they needed due to failure to prepare and act early. Planning for disasters is imperative, not only for the HME company but also for the patient. Begin preparations as early as possible — don't wait until it is too late. ■

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General Counsel

Disaster Planning

by Anthony L. DeWitt, JD, RRT, FAARC

No battle plan survives first contact with the enemy.
—Helmuth von Moltke

Disaster plans are things that every hospital has but hopes never to have to use. It is tempting to think that because your hospital has planned out what might happen in any disaster, you don't need to worry about it. Everything is ready to go! Nothing could be further from the truth.

Every hospital plans for emergencies. Every hospital drills for mass casualty events. But no one ever thinks it will happen there. It is always another town. It is always another hospital. Yet the hospitals in Joplin, MO, know that it isn't always another town, and it isn't always another hospital.[1] When a disaster strikes is not the time to start planning for an emergency. All therapists need to plan in advance for the possibility that their community may be hit by weather, terror, disease, or other emergency. Not only should they know the plan, they should know that the plan may not survive first contact with the disaster, and have back up plans. Even more importantly, they should know that the disaster may hit while they are at work. Their family members may be at home, at school, or at a little league ballgame. They may not be there for the ones they love. The need to take care of family is powerful, but a therapist cannot abandon patients to tend to family in a disaster. A therapist has to ensure that his family can make it without him, if the need arises. Even if you're lucky enough to be home when disaster strikes, you're going to be needed quickly at the hospital. Recognizing this reality and planning for it is the difference between surviving the experience and a bad outcome. But, nothing ever happens here, right?

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.

Let's think about the statistics. There are 100 nuclear reactors in the United States. While accidents are rare, they do happen. And a Fukushima-type event as a result of earthquake, plane crash, or act of terror is not unthinkable. Similarly, there are nearly 8,100 major earthen dams in the United States, and many of these are in critically bad shape, requiring only a heavy set of spring rains to cause them to fail. Google "Johnstown Flood" or "Johnson Shut-Ins Flood" and view the photos. It can happen in the blink of an eye.

Of the more than 40,000 chemicals in commercial use, most are subject to accidental spills or releases. Chemical spills and accidents range from small to large and can occur anywhere chemicals are found. Tornadoes, hurricanes, blizzards, heavy rains, and other weather events can cause equal amounts of damage and destruction.

The good news is that when a company causes environmental damage or other peril, they are responsible for the clean-up and for damages. You may be able to sue if your home or property is damaged. But in order to collect damages, the first thing you have to do is to survive the event. If you have not thought about and planned for emergencies, then you're not only letting your hospital down, you're letting your family down.

In a community emergency, you are going to be needed at the hospital. For that reason, you need to have an emergency plan so that you can be confident that your family is safe and protected. You cannot give your full attention to mass casualties if your mind is

wondering whether the next patient around the bend will be a loved one.

Every family should have a portable adult-sized backpack that is filled with three days of food and water for every member of the family. It should be located where any family member can find it in an emergency. It generally takes three days for federal and state resources to mobilize, so your family, particularly in your absence, needs to be able to survive for three days without help. In addition to food, a week's worth of prescription medicine needs to be in the backpack, along with a small thumb drive with your basic medical information saved in PDF format (allergies, blood type, medication sensitivities, etc.). A small stash of cash money ($50 per family member) should be included, along with at least one credit card. Rounding out the survival bag should be a first aid kit, flashlight, and commercially available survival blankets to keep people warm and dry in an emergency.

Disaster planning for your family should include plans to meet at specific points in your city, and in one distant city. I travel a lot for my job. I may not be home when an emergency strikes. We have planned ahead for this eventuality. For example, our family has emergency rally points in Auburn, AL, as well as in Montgomery and Destin, FL. If we're separated, we know that we will always know where to find each other, even if communications break down. As an amateur radio operator, I always have communications available.

It is also important to plan for things to do, particularly if you have children. Small children are unlikely to be of much help during an emergency, but even teen civilians without any medical training can bring water and offer comfort in an emergency as volunteers. It is a good idea to discuss with your hospital's emergency coordinator what the hospital's policy is on sheltering family members during a disaster. The hospital may allow it, or it may not, depending on its mission, size, and resources. If your children are not volunteering at the hospital, shouldn't they be?

A communication plan should rely on something other than cell phones. In a natural disaster, cell phones may be knocked offline. In a terror emergency, phone towers are often taken off-line to prevent cell phone use by radicals. For this reason, your family should have pre-defined places to go where there are land-line telephones available for use in an emergency. Knowing your family is safe will free you to treat patients without the nagging worry about their wellbeing.

Disaster planning requires you to be a good science-fiction writer. Science-fiction writers imagine alternative realities and place their characters in them. You need to imagine what might happen in a flood, earthquake, tornado, terror attack, or other disaster. What roads might be blocked? What bridges might be unsafe? Is there a chemical plant or nuclear reactor that might cause problems in a flood or earthquake? Where will your family find support while you take care of patients?

It isn't enough to plan a disaster response. You have to practice it. You have to hold drills, just like fire drills, to ensure that you're ready. You have to check your emergency supplies once a year and rotate out old food and supplies. You have to have confidence that in an emergency your family will follow the plan.

You also have to develop ingrained habits, like never letting your car go below half a tank of gas (in an emergency, gas pumps may not have power). You should know that banks and credit cards may not work in an emergency and be ready to pay for things with cash.

In short, you have to prepare in advance, because once the tornado siren starts to wail, it is too late to wonder where you put the flashlight and matches. For more information on disaster planning, see https://www.ready.gov/make-a-plan. ■

Reference

1. Bunch D. When the going gets tough, RTs get going. *AARC Times* 2011;35(11):34–39.

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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You Are What You Practice

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

In 1862, Sarah Lockwood Pardee married William Wirt Winchester of the famous Winchester Repeating Rifle Company. The couple's life together was happy, and they moved in the best of New England's high society. However, in the late 1800s, disaster struck when Mrs. Winchester lost both her infant daughter and husband prematurely. This loss sent her into a deep depression, from which some said she never fully recovered. She ultimately sought help from a spiritualist. Mrs. Winchester believed that angry Civil War and American Indian spirits of people killed by Winchester's rifles who had caused the deaths of her daughter and husband. Valuing her own life above all others, she set sail on a journey to try to please the spirits by building a sprawling mansion containing something like 160 rooms, 2,000 doors, 10,000 windows, 47 stairways, 47 fireplaces, 13 bathrooms, and six kitchens.

You are likely wondering where I am going with this — I see bits of our profession in Mrs. Winchester's eccentricity (a nice word for craziness). When speaking at your state societies and sharing my vision for the future of our great profession, some of you have come to me with concerns that if we reduce our workload by providing appropriate therapy to the appropriate patient at the appropriate time, there may not be a need for as many RTs, and we may work ourselves out of a job. In the analogy of the Winchester story, this is crazy. Think of all the time and money put into a belief that was sold for pennies on the dollar as soon as she died. Not to mention all the laughs and loss of credibility created by her strange behavior. While I can't promise all RTs will always have the job of their dreams or that we will even have the same number of respiratory therapists across the country as we do today, I envision a health care environment with many respiratory therapists — but only if we are thoughtful and rational now.

about the author...

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

As successful businessman Philip Green stated, "You've got to love what you do to really make things happen." We — yes, I said WE and not me or your boss — must create value by investing in our profession. We do this, not by investing in perceived value like all the windows and doors that Mrs. Winchester created, or like those therapies for which there is no indication or benefit to the patient, but by increasing our standard and quality of care. When one therapy is proven not to be helpful, we devote less attention and effort to that therapy and invest our time and effort in therapies or arenas of practice that increase our value to health care and — much more importantly — to the patient. Today we have a wonderful opportunity to invest in areas like disease management and prevention, ICU and pulmonary rehabilitation, patient education and training, and — hopefully in the near future — telemedicine.

If you don't know how to create valuable respiratory care, then educate yourself. Yes, I am calling you out. It's not my job or somebody else's job to conduct a needs assessment of your level of knowledge and education. It's your professional responsibility! Please take the time to evaluate your practice needs. There are resources all around you, if you choose to make a real difference. The AARC as well as your state societies and employers provide great educational opportunities. Very few RTs take advantage of the free continuing respiratory care education offered by the AARC. It's the simplest things that make the biggest impact in our patients' lives. You've heard it's the weakest link that breaks the chain. So, let's get started. Don't be the weakest link. Help us grow to practice at the top of our license, not the bottom. Make a difference today. ■

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Advocacy at Its Best: Grassroots in Action

by Anne Marie Hummel and Frank Salvatore, RRT

Advocacy can take on many forms. As a national professional organization, AARC is committed to advocate for respiratory therapists (RTs), their patients, and the profession as a whole. As Associate Executive Director for Advocacy and Government Affairs, it is my job to carry out that mission.

One of the most visible forms of advocacy, of course, is federal legislation that includes respiratory therapists. We completed our 2018 annual Capitol Hill Advocacy Day on May 1, and it was a huge success. As you have read in AARC News Now and on the AARC website, we asked for support of pilot legislation that would include RTs as telehealth practitioners to provide certain disease management services to Medicare beneficiaries with chronic obstructive pulmonary disease (COPD).

Thanks to the outstanding commitment of our Political Action Contact Team (PACT) representatives, who held approximately 300 meetings to make our case, and to the many state advocates who sent thousands of emails to congressional leaders in advance of the face-to-face meetings, we had word by the end of the day that legislative counsel was drafting the legislation and a bill would be introduced by Congressmen Mike Thompson (D/CA) and Mike Kelley (R/PA) by late May or early June. Of course, we know how deadlines go on the Hill, especially since we were also informed that the bill could be delayed because of the Administration's priority to pass timely legislation to address the opioid crisis. Hopefully, when you read this article, the AARC will have a bill number and will be in the midst of another virtual lobby campaign to gain co-sponsors.

At the national level, advocacy isn't just about legislation. It's also about tracking federal rules and policies that can impact the profession. Keeping RTs at the forefront of the minds of federal policymakers through comments on relevant topics helps reinforce the value that RTs bring to the health care system. Issues we have addressed include discharge planning, pulmonary rehabilitation, mechanical ventilation, chronic care management and care coordination, pediatric telehealth procedures, hospital readmissions, and skilled nursing facilities — to name just a few.

The AARC is also a member of two large coalitions — one that addresses telehealth and remote patient monitoring, and another that addresses tobacco issues that impact public health and especially individuals who suffer from chronic respiratory conditions. We have partnered with organizations committed to similar goals, and as such, the AARC signs on to joint comments that carry weight with policymakers. As of Jan. 1, 2018, Medicare began paying separately for remote patient monitoring, an integral part of telehealth communications. This was a big win for the telehealth coalition, who had advocated strongly for separate payment in numerous comments to the Centers for Medicare and Medicaid Services. It is also a significant win because our pilot legislation covers remote patient monitoring for individuals with COPD.

But advocacy doesn't end there. The everyday efforts and commitment of the AARC state societies to work diligently for RTs and their patients are the heart and soul of advocacy.

about the authors...

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

Frank Salvatore, MBA, RRT, FAARC, is the AARC's immediate past president and chair of the Advocacy and Government Affairs Committee.

Grassroots efforts at the state level come in many forms. One recent effort by the Connecticut Society for Respiratory Care (CTSRC) is an example of how folks came together and worked diligently behind the scenes to push forward significant legislation to improve the scope of respiratory practice in that state. And who better to tell that story than our immediate past president and chair of AARC's voluntary-led grassroots advocacy committee and member of the CTSRC, Frank Salvatore, MBA, RRT, FAARC. Take it away, Frank!

The grassroots picture

I can't tell you how immensely proud I am to be a member of the Connecticut Society because what occurred in a short legislative session year was nothing short of a miracle. This is the story of how state legislation goes through ups and downs during the course of a legislative session and how the use of a lobbying firm, along with active state leadership, can move the ball.

What happened in Connecticut is what we've been describing on a national level when it comes to the plethora of bills we've advocated for nationally in the past. The bill in Connecticut this year was Senate Bill 403 — An Act Concerning Respiratory Care Practitioners. The bill, which had the support of the Department of Public Health and looked like it was going to make it through the short session, ended up being opposed by the nursing and perfusionist organizations. It quickly looked like a bill not only in trouble, but one that would die in committee.

In fact, the bill didn't make it past the public comment period in the Public Health Committee. But that's where the behind-the-scenes work of the CTSRC lobbyists and leadership took on another dimension. They found a supporter in one of the senators who was a co-chair of the committee. There were conference calls by the CTSRC leadership with the senator and with the parties who opposed the bill, facilitated by the CTSRC lobbyist firm to work out the issues.

While SB-403 on its own was dead on the committee floor, the language from within the bill took on new life. After the hard work of the CTSRC lobbyists, the senator, and CTSRC leadership, the language emerged inside an amendment to the Public Health Omnibus bill, House Resolution B-5163. From there, it passed the House on May 5, 2018, with only four days left in the legislative session. The CTSRC lobbyists really worked hard in the background, and much of their work wasn't seen by the CTSRC membership, but on the last day of the legislative session (May 9, 2018) — after all the behind-the-scenes work — the bill passed the Senate. The bill was signed into law June 14, 2018, by the governor.

Inside this tale of the ups and downs of SB-403, which emerged from life support as language in the larger HR-5163 bill and was passed by both chambers of the Connecticut legislature in record time, is the message that we're trying to get to our membership... the grassroots. As members of AARC, it is important to understand how legislation works, both at the state level and at the federal level. We can't be disheartened by the inevitable "downside" of the legislative process because at some point there will be the "upside."

I want to congratulate the CTSRC leaders who persevered and learned how the wheels of legislation don't take a break on weekends or holidays. Don't get me wrong — this wasn't a perfect application of state legislative communications, but my own state affiliate has seen how hard it is to engage those on the grassroots level, even when the legislation will affect every licensed respiratory care practitioner in Connecticut. They had to find alternative ways of communication to get messages to key legislators, and they did. If it weren't for the leadership of the CTSRC and their lobbyist staying on top of things, there could have been a very different ending and moral to this story.

"Thorough communication" was a key lesson learned when broadening the Connecticut respiratory care scope of practice to bring it up to date and to add changes, according to CTSRC President Jason Wright, MBA, RRT, ACHE. He elaborated, "It is the most crucial element in introducing change, by getting ALL of your state society involved, making phone calls, and sending emails to senators and representatives to influence and support the changes."

In the end, the CTSRC's legislative story should be a shining example of our state affiliates' efforts on behalf of our membership and why legislative advocacy is not only necessary federally, but on the state level as well. ■

Ready To Roll

AARC members explain how they're involved in disaster response

by Debbie Bunch

When disaster strikes, the outcome depends heavily on the preparation that went on before the event ever occurred. That's evident throughout society, but nowhere is it more critical than in health care, where hospitals and other providers rely on their ability to quickly implement plans formulated in advance and government agencies train special teams that can rapidly deploy to augment overwhelmed local services.

> Disasters often come with little or no warning. That's why preparation is so important.

You'll find respiratory therapists playing key roles in both of these arenas. Five AARC members share their stories here.

On guard

Hurricane Harvey made landfall in Texas on August 25, 2018, bringing with it torrential rains that devastated the Houston metropolitan area. Wadie Williams, Jr., MS, RRT, CerAT, MEMS(S), and his staff in the respiratory care department at Houston Methodist Hospital were on guard. "When it appears something is about to happen, I begin working my 'countdown clock' from awareness of the possibility or event to zero hour and start bringing in additional resources and pre-positioning them," says the manager of respiratory care and dermatology therapeutics.

As a member of the Texas State Guard, Williams draws on his military training — he's a senior-level military emergency-management specialist — to make sure his department is prepared for any eventuality. With Harvey, that meant taking in two deliveries prior to the storm and bringing on additional medical gas stores. He then positioned supplies and cylinders in each of the patient care buildings on the Houston Methodist campus in advance of the hurricane to ensure staff would have what they needed in case travel between buildings proved impossible. "Medical gas supplies are crucial, so we keep 250E O_2 and 100 air cylinders in reserve year-round for disaster response, in addition to a week's worth of critical supplies — vent circuits, etc. — in our department's internal disaster storeroom," says Williams.

Staffing is critical to success in these incidents as well, and he makes sure his people are ready. "We give the staff early warnings to take care of their homes and families, get their go bags in order, etc., so they can mobilize when called." Since Harvey struck a little earlier than expected, staff already in the hospital were stuck there and became de facto members of the hospital's "Rideout Team" simply because members of the Rideout Team couldn't make it in.

Nearly half of the RTs he had on hand that day had never worked a hurricane or other major disaster. Says Williams, "I have long been an advocate of making Basic Disaster Life Support a required competency for all medical personnel so there's a basic, rudimentary knowledge and understanding of how the disaster/emergency response process works."

Wadie Williams (left) discusses tactics with Captain Wayne Hogard at a recent Texas State Guard annual training exercise.

Janet Stephens (right), with her interim commander (left) and a caregiver at the high school shelter in Wesley Chapel after Hurricane Irma.

Janet Stephens and her fellow team members on WI-1 participate in annual Patriot Training exercises with the Air National Guard and U.S. Army. This photo was taken at the 2017 event.

Adrenaline junkie

A self-described "adrenaline junkie" who worked as a transport therapist early in her career, Janet Stephens, BS, RRT, RRT-ACCS, was long aware of the National Disaster Medical System and its Disaster Medical Assistance Teams (DMATs). But it wasn't until she got actively involved with her regional trauma advisory council after she moved to Wisconsin that she joined a DMAT herself. The critical care and education coordinator at Froedtert Hospital in Milwaukee started training with the WI-1 DMAT in 2013 and became an official member of the team in 2015.

Her first deployment came last year when WI-1 was called into action for the impending arrival of Hurricane Irma. Her team was flown to Atlanta on Sept. 6, where they staged with teams from Massachusetts and Hawaii. On Sept. 9, the entire group was bussed to Orlando, FL, to stage on Disney property. The resort had shut down prior to their arrival, and her team quickly received its first assignment: head to a large shelter in a regional high school in Wesley Chapel that was already overwhelmed with people seeking refuge from the storm.

"We were initially told that there were approximately 1,000 people in the shelter, with about 50 requiring special medical needs," says Stephens. "Truth be told, they were housing about 2,000 people, including well over 250 clients with special needs." She quickly joined forces with another respiratory therapist from Arizona who deployed with her team and began assessing the oxygen situation. "One whole room, likely a meeting area, was wall-to-wall oxygen-dependent patients."

They asked health department representatives who were onsite to bring in oxygen cylinders to back up the liquid system currently in use. That was a good idea. The next morning, the liquid system did indeed break down, and she spent the day shuffling tanks, helping clients take their home therapies, and assessing clients along with the team physician. She also pitched in whenever and wherever other help was needed, such as assisting clients to the restroom. "Whatever was needed, was what I did," says Stephens.

While she was busy at the Wesley Chapel shelter, about half her team was shipped out to assist at another shelter, and they all stayed put as Irma made landfall on Sept. 10. After the storm passed, many of the Wesley Chapel clients were able to return home safely or were transferred to the other shelter at Hudson, and Stephens and her fellow WI-1 team members at Wesley Chapel headed to Hudson to help there. She says they transferred several acutely ill patients to the hospital at both shelters, including one man at Wesley Chapel who had suffered a heart attack during the height of the storm.

Up for the challenge

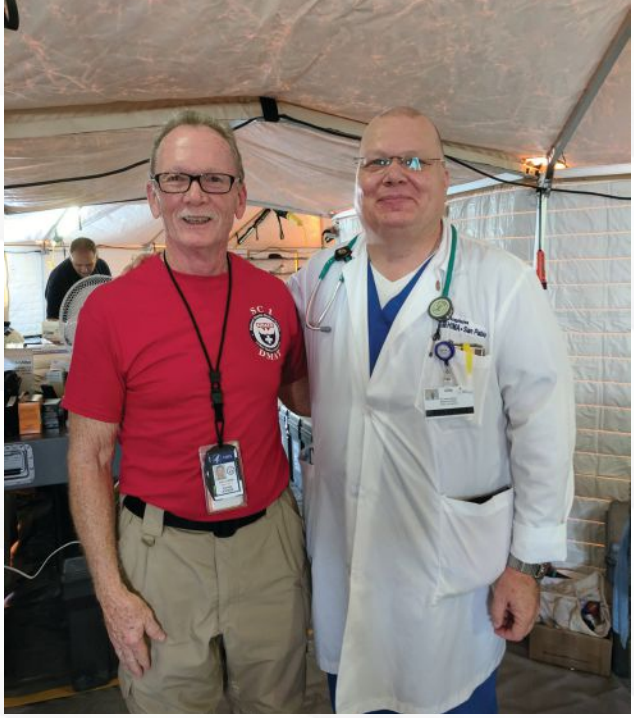
Joel Livesay, MS, RRT, RVT, says his interest in disaster response was born on 9/11. He started out by volunteering with a local Community Emergency Response Team, and when a friend approached him about joining a DMAT, he was up for the challenge. "I think this is a perfect fit for a respiratory therapist, with the many responsibilities and

situations we have to deal with," says the respiratory care department chair at Spartanburg Community College in Spartanburg, SC.

As a member of the SC-1 DMAT, Livesay deployed to help after Super Storm Sandy and, most recently, after Hurricane Maria devastated much of Puerto Rico last year. "We initially staged in San Juan until we were given a mission in Fajardo," he says. "The conditions were austere, with two tents sleeping 30-plus team members and limited bathroom and shower facilities."

The team set up a base of operations in the rear parking lot of a local hospital, where they provided medical care to people with a range of issues. They also evaluated the hospital to find out what they needed in terms of staffing support and medical supplies, and after determining that the hospital was in fairly good shape, they extended their mission out into the community. "As you know the electrical grid was knocked out on the whole island," says Livesay. "One hospital had a total failure of their backup generators, and after one night of air conditioning, we gave up our portable generators along with our AC units to permit that hospital to set up a portable ICU for ventilator-dependent patients." Temperatures inside the ICU in that facility had risen to more than 100 degrees, making it paramount that patients be relocated.

Livesay emphasizes it can take some outside-the-box thinking to make sure people get what they need in these kinds of situations. For example, many of the patients he came in contact with had nebulizers, but without electricity they were useless. "We had to be creative and make improvised suggestions for effective medication delivery," he says. "When we ran out of spacers for the MDIs, I found



Joel Livesay (left) with a physician working at the Puerto Rican hospital where his DMAT was deployed.

a plastic bottle cut in half worked well for a short-term alternative."

Making do with such rudimentary solutions is a wake-up call for health professionals such as himself who are accustomed to having the best of everything at their fingertips. "It is always a humbling experience," he says.

Additional duty

Fred Scharf, BA, RRT, had extensive training in biological and chemical warfare prior to being deployed with the 300th Field Hospital to Saudi Arabia for Desert Storm, and he brought that knowledge with him into his position as emergency management coordinator (EMC) at University of

Joel Livesay pays his respects at the 9/11 memorial in New York City.

SC-1 team members gather for a group shot.

Pittsburgh Medical Center (UPMC) Susquehanna in Sunbury, PA. "With my military background and the knowledge that 90% of biological and/or chemical attacks were going to require extensive respiratory therapy involvement, I felt that I had no choice but to take a leadership role in emergency management," says Scharf.

He began working with emergency management in his hospital after 9/11 and the anthrax scares that followed, and when the previous EMC left the hospital in 2005, he took on the position as an "additional duty" to his primary role as supervisor of respiratory therapy. His role as EMC spans four phases of emergency management — mitigation, preparedness, response, and recovery. He's also involved in local, regional, and statewide preparedness committees and organizations. "Success in this business is directly dependent on relationship building with those whom you meet and work with across the many disciplines involved in preparedness," says Scharf.

His hospital was recently acquired by UPMC in Pittsburgh, and he says that's given him a big boost in his EMC position. "This health system has a very robust Emergency Management Program, with a tremendous amount of resources and expertise that I am now able to tap into."

While his hospital hasn't faced any large-scale emergency situations since he took on the EMC role, Scharf says they have experienced a couple of limited hazardous-material incidents that required the decontamination of some patients. A regional flood resulting from Tropical Storm Lee in September 2011 also put his processes to the test. "We were in response-and-recovery mode for several days," says Scharf. "The training and planning that was utilized during that time period ensured that patient care was never compromised."

Charlie Friderici, RRT

A full plate

As emergency preparedness coordinator at Saratoga Hospital in Saratoga Springs, NY, Charlie Friderici, RRT, is responsible for maintaining emergency operations plans for both the hospital and its offsite locations. He is also charged with planning, conducting, and evaluating exercises; maintaining documentation for the Centers for Medicare and Medicaid Services and Joint Commission regulatory requirements; and providing training on all of the facility-wide plans. At the regional level, he chairs a workgroup that's been tasked with coordinating mass-gathering event planning among hospitals, emergency medical services (EMS), state and county health departments, and the state office of emergency management. Part of their mission is to create a regional radio plan that will allow for shared voice and data between all the hospitals and EMS agencies within a 17-county area.

Friderici serves on the Local Emergency Planning Committee in his county as well, which works to address hazardous-material incidents, and he is a member of the state Emergency Management Association and its regionally affiliated group. He shares his expertise by serving as an instructor for the Certified Hospital Emergency Coordinator basic and advanced courses, and he teaches courses on clandestine drug and explosive lab chemical awareness.

"Locally we collaboratively plan for the Saratoga horse-racing season — this

Disaster Response Resources from the AARC

Interested in learning more about the RT's role in disaster response? Join the Disaster Response Community on AARConnect to network with therapists who are already actively involved and those who want to know more.

planning involves law enforcement and federal and state agencies, as well as the hospital and EMS systems," says Friderici. In any activation, he responds to his hospital command center and serves as a liaison to outside partners. "Depending on the scope of an incident, I also deploy to the county or state operations center and act as a liaison back to the hospitals in the region," he says.

This full plate keeps him busy, but he knows it will all pay off should his area be struck with a large-scale emergency situation.

Kudos to these RTs

Whether they are working with state and local agencies to plan for natural or manmade disasters, making sure their own hospitals and departments are ready for any eventuality, or serving on the front lines of disaster response via the federal government's DMATs, respiratory therapists are bringing their expertise to bear on the medical care available to citizens when the worst occurs. We should all applaud their efforts. ■

The AARC Disaster Relief Fund

AARC members are on the front lines of disaster preparation and recovery. But sometimes they are in the crosshairs, too. The AARC established the Disaster Relief Fund more than two decades ago to assist members in federally declared disaster areas who have lost their property due to one of these events. The fund has been activated following hurricanes in Florida and the volcano in Hawaii, earthquakes and fires in California, flooding in the Midwest, tornadoes in numerous areas of the country, and in many other disasters. AARC members keep this fund going. You can go online at AARC.org or call AARC Customer Service at (972) 243-2272 to learn how you can help.

Disaster Prep Resource from The Joint Commission

The Joint Commission has published a new *Quick Safety* advisory that can help health care organizations ensure their facilities are ready for any disaster that comes their way. The advisory provides organizations with risk factors to consider when preparing for a disaster, along with safety recommendations and research on how to continue operations during an emergency situation.

Noting that a disaster can disrupt a facility's ability to operate for days or weeks following the initial crisis, the advisory outlines best practices in continuity of operations planning. Among the essential elements recommended by the publication –

- Continuity of facilities and communications to support organizational functions.
- A succession plan that lists who replaces the key leader(s) during an emergency if the leader is not available to carry out his or her duties.
- A delegation of authority plan that describes the decisions and policies that can be implemented by authorized successors.

The advisory suggests health care organizations implement these safety actions when planning for disaster situations –

- Document leadership succession and delegations of authority.
- Identify the essential functions, capabilities, and assets that must be protected to survive a disaster.
- Prioritize likely risks and how the organization will invest in and implement mitigation activities.
- Work with local emergency management, service providers, and contractors to establish processes for effective communications, recovery, and restoration.
- Identify alternate care sites, if needed.

The *Quick Safety* advisory is available on www.jointcommission.org and may be reproduced if credited to The Joint Commission.

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Photo courtesy of the Strategic National Stockpile Communications Team, Centers for Disease Control and Prevention

The Strategic National Stockpile

A partnership between the AARC and the Centers for Disease Control and Prevention helps get RTs up to speed on the ventilators that will be called into action in the event of a large-scale national disaster by Debbie Bunch

In 1999, the federal government established the National Pharmaceutical Stockpile to ensure the nation would have access to the medical supplies it would need to combat potential agents of bioterrorism like botulism, anthrax, smallpox, plague, viral hemorrhagic fevers, and tularemia. The 9/11 attacks that took place just two years later made it abundantly clear that bioterrorism wasn't the only thing we needed to be worried about. In 2003, the National Pharmaceutical Stockpile was renamed the Strategic National Stockpile (SNS) and placed under the direction of the Department of Health and Human Services. Today the stockpile includes more than $7 billion worth of medical supplies and equipment, including antibiotics, chemical antidotes, antitoxins, vaccines, antiviral drugs, personal protective equipment, ventilators, and more. All these items are strategically placed in various locations around the country to ensure quick access in times of need.

In addition to chemical attacks, the SNS can respond to outbreaks of bacterial and viral diseases, pandemic influenza, radiation and nuclear emergencies, and natural disasters. Products that go into the stockpile are those that are not available to the general public, may not be available in the timeframe for which they are needed, or may not be available in the required amounts.

AARC is a key partner with CDC

Managing this large array of medical supplies and equipment requires a coordinated effort on the part of government at all levels, the private sector, and non-

governmental organizations. The Centers for Disease Control and Prevention (CDC) has set up partnerships with a number of clinically related organizations deemed essential to the process, and the AARC is its key partner when it comes to the SNS ventilators.

"Several meetings involving AARC members have been convened to discuss ventilator requirements, as well as ancillary equipment including suction catheters, HMEs, circuits, etc.," says Richard Branson, MS, RRT, FAARC, a professor of surgery emeritus at the University of Cincinnati who has played an integral role in the AARC's SNS activities. The goal has been to define the capabilities the ventilators in the stockpile should have, but Branson emphasizes the AARC does not select the devices themselves. "CDC makes the decision when manufacturers submit products, and CDC compares the requirements to the function of the devices," he says.

The AARC plays a significant role in training respiratory therapists and other providers in the use of the ventilators chosen by the CDC. Regular sessions are held on the three mechanical ventilators currently in the stockpile — the Impact 754, the LP 10, and the LTV 1200. Branson says the workshops address the very real concern that many clinicians don't have the experience with the devices in the stockpile they will need during an emergency. "If you have a situation where you have an influx of critically ill patients requiring ventilation, having a bunch of ventilators dropped off that your staff has never seen is unlikely to be helpful," he says. "Training eliminates this concern."

Disseminating knowledge

The AARC has offered the SNS workshop at the AARC Congress and state society meetings across the country, and it has always been free for the respiratory therapists and other health care providers who attend. Over the past few months alone, the Association has taken the training workshop to the Nebraska Society conference, the California Society conference, the Illinois Society conference, the Georgia Society conference, and the New Jersey Society conference. SNS Program faculty include Chris Blakeman, MS, RRT, John Inkrott, RRT-ACCS, Shawna Strickland, PhD, RRT, RRT-NPS, RRT-ACCS, AE-C, FAARC, Lewis Rubinson, MD, PhD, and Dario Rodriquez, MSc, RRT.

The workshop not only provides therapists and other health care providers with the information they need to familiarize themselves with these ventilators, but also provides the opportunity to work with them on a hands-on basis to see how they will function in a real-world situation. Ventilator-specific information from the manufacturers ensures the education is valid, and respiratory therapists are also instructed in the cross-training of respiratory therapy extenders for medical emergencies.

"Even if we can only train a few champions, the 'train the trainer' model disseminates knowledge," says Branson. "The sheer number of ventilators on the market and their nuances make it difficult for RTs to be proficient in all products." He notes that state stockpiles often give the ventilators to hospitals at no cost as well so they can individually train their staff on their use. Staff members use the ventilators during non-emergency situations and thus become familiar with their operation and maintenance.

The time is now

Thankfully, our nation has yet to experience a natural or manmade disaster requiring large-scale use of the mechanical ventilators in the Strategic National Stockpile. But other respiratory-related equipment in the SNS has been called into action — the most recent instance was the deployment of oxygen concentrators during Hurricane Harvey last year. According to the CDC, SNS staff members arrived at the shelter set up in the George R. Brown Convention Center to find that Houston was running out of oxygen. The strike team began setting up their concentrators, with local providers connecting patients as fast as the team members could hand over the oxygen lines.

Respiratory therapists don't need extra training to know how to place a patient on oxygen. But they do need extra training to know how to operate the specific mechanical ventilators that they will have to rely on in the event of a large scale disaster — natural or manmade — that consumes the existing supply of ventilators in their hospitals or their communities. The AARC partnership with the CDC ensures respiratory therapists have the opportunity to acquire that knowledge before disaster strikes. ■

> Your hospital has enough ventilators to handle its usual demand and even a little more. It doesn't have enough ventilators to cover a major respiratory emergency. That's where the Strategic National Stockpile comes in.

Emergency Management Offers Advice on Handling Disasters

Disaster Planning 101

Florida therapist offers good advice for respiratory care departments

Respiratory care departments are essential to the operation of any hospital, and this means that they need to carefully plan for emergency situations. As director of the Florida Hospital Association, John Wilgis, MBA, RRT, has a firm take on what departments need to do to get ready. He shares his insights with us here.

Why is it important for respiratory care departments to have a disaster plan in place?

Plans are important for many reasons, primarily so that everyone understands their specific role and responsibilities during an emergency event or incident. A department's plan is part of the larger hospital emergency operations plan, but still an important piece. The plan should address how the department will respond to any situation with personnel, equipment, and medications, along with any changes to how therapists would care for a patient throughout the incident.

What do RT managers need to know about their hospital's emergency management plan before embarking on their department-level plan and why?

Managers need to have a general understanding of what their hospital emergency operations plan is and how their department responds within that plan. Hospitals are required to do risk-based planning for their facility and in conjunction with the risks across their community. Department leaders should know those risks and hazards and the potential impact they may have on the hospital's ability to provide care to the community. Knowing this allows a department to be better prepared to respond. For example, if your hospital is in a state that is prone to hurricanes, there's a strong possibility for power loss and emergency generator use. How do you protect patients and staff under these circumstances? How do you maintain the standard of care?

What are the key components that RT managers need to include in their department-specific plan, and why are these components essential?

Every plan is a little different — there's no cookie-cutter approach. That said, there are three primary areas a department-specific plan should focus on: staff, stuff, and space.

Planning for personnel can be very challenging on a day-to-day basis, and it is even more so during a crisis. A primary consideration for staff planning is safety. How does a plan support the safety of the patient and of the workforce? Certainly issues like shift scheduling, downtime and breaks, and release to go home are considered. But other issues like staff family support and childcare are important, too. Managing resources is also challenging because hospitals, and departments, work with a just-in-time inventory. A department plan should address how material resources are going to be obtained and conserved. Hospital accreditation and regulations speak to having adequate resources on hand to respond and maintain a safe environment, and a good plan should look at how to provide resources for up to and over a week.

Space is a precious commodity in health care. You need space for regular patient care, and space to shelter individuals, staff, their family, and possibly pets. Plus, you need places to put all their stuff. Managing the physical environment can be just as challenging as all the rest — not to mention the challenge that would arise if the situation were catastrophic or created an evacuation scenario. Working in an austere environment poses many challenges.

What do RT managers need to include in their department-specific plan when it comes to RT equipment?

In my experience, I've learned that the equipment planned for is not much different from what we use every day, with a few exceptions. As respiratory therapists, we are still going to need the basics — nasal cannulas, oxygen, nebulizers, and other therapy-delivery devices. The questions turn to portability and maintaining a standard of care during the disaster. Issues like medical gas become more complex. Mechanical ventilation, along with complex therapies like extracorporeal membrane oxygenation, nitrous oxide ventilation, and others, pose significant challenges to creating a disaster plan. Evacuation is another matter that changes the dynamic of delivering care to patients.

We learn many lessons from real-world events that help us address equipment-related issues in a disaster. The AARC, working with the Centers for Disease Control and Prevention, has also taken steps to provide information and support for therapists who may be confronted with using ventilators from the Strategic National Stockpile or a state's cache of ventilator resources. Managers should ensure that their plans address these issues and that their staff members have a clear understanding and can demonstrate competency in activating their plan.

What should managers be looking at specifically in terms of planning for staffing during an emergency?

Managing personnel across many care areas is a challenge during an emergency. Direct considerations should be:

- Ensuring your staff members have a personal plan and a family plan for disasters;
- Ensuring they understand their role, responsibilities, and the hospital/department expectations should they be activated to work during a disaster;
- Providing notification to all staff of the event and a platform that supplies continuous updates on the situation;
- Ensuring they bring adequate supplies for their personal care during the time they work;
- If available, ensuring the activation of disaster pay differentials;

As an RT from the state that sees more hurricanes than any other, John Wilgis is no stranger to natural disasters. The director of the Florida Hospital Association knows how to handle them, too.

- Capturing all hours worked by staff within the finance department's pay code for the disaster for possible cost recovery;
- Developing and using a call schedule or a "Team A" and "Team B" approach that provides adequate staff coverage for all patient care areas;
- Providing areas for downtime, breaks, and rest;
- Providing a mechanism to allow staff to assess the impact of the event to their personal lives (e.g., property, family, pets, etc.) and supporting them to address the impacts;
- Having a system in place to assess signs of stress, fatigue, and psychological trauma from the event;
- Providing crisis counseling to help individuals cope with the event and its personal and professional impacts;
- Ensuring there are staff available to backfill and provide relief capacity (e.g., "Team C");
- Considering the use of volunteers — how they would help, what they would do, where they would work, and how they would make a difference;
- Considering the implications of allowing staff to have their family shelter within a facility; and
- Considering the implications of sheltering pets within your facility.

What do managers need to do to ensure their staff are properly trained to handle disaster situations?

In addition to the aforementioned AARC/CDC course on the ventilators in the Strategic National Stockpile, there are formal training courses like Advanced Disaster Life Support and hazardous materials training for chemical, biological, radiological, nuclear, and explosive events. There are other trainings like "Stop the Bleed" that focus on simple bleed control from incidents like active shooters. Not all employees need this level of training, but certainly, if someone shows an interest, the manager should encourage and support their professional development.

The most important thing managers/directors need to do is ensure their staff members understand their role in a disaster. Are they going to work outside their normal functions? Most likely not, but if they are expected to do something different, what does that entail and what education do they need to support them in that role? It is often more about task-oriented work that can be supported using checklists.

How do communications figure into disaster planning, and what recommendations do you have for RT managers to ensure an open line of communications with staff, other providers, emergency management services, etc., in a disaster situation?

Communication is everything! It can also be a major point of failure. Managers should remember the basics of communication — with whom are you communicating, what are you communi d the other person's role and responsibility within that plan.

Is there anything else RT managers should consider when they plan? If so, what is it, and why is it important?

I always say the most important thing is ensuring your staff members have personal and family plans for disasters. If you aren't prepared, or you don't have a plan that provides for your family's safety, I, as a manager, can't expect you to come to work when needed and perform effectively.

The second thing I say to my colleagues is to get involved with your hospital emergency preparedness committee. This is the group that knits everything together — planning, prevention, response, recovery, and mitigation. Being engaged with this group helps ensure that the department's role is integrated into the success of the hospital's response. ■

— 2018 —

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

The AARC'S CORPORATE PARTNERS

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

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

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Industry Watch

Affordable cough-assist device may aid underdeveloped countries

Working with engineering students at Grand Valley State University in Allendale, MI, Bassel Salman, MD, a pediatrician with Beaumont Health, also in Michigan, has invented a cough-assist device that doesn't require electricity. After the tubing and mask are fitted to the patient and connected to the device, the caregiver places his foot on the top of the machine, and like a bellows, pushes down to generate positive pressure while watching the pressure manometer to assure a safe pressure. The caregiver then releases his foot, creating negative pressure, which dislodges and removes secretions from the respiratory tract.

The entire project, including 3-D printing, costs just under $800. The prototype costs less than $300. "I am hopeful this device will impact patient care by offering patients worldwide a better quality of life by decreasing the cost of more intensive therapy," explained Dr. Salman.

ZOLL Medical receives FDA approval for AEDs

ZOLL Medical Corporation has received FDA approval for its ZOLL® AED Plus® automated external defibrillator (AED) and Fully Automatic AED Plus®. The devices use two multifunction defibrillation electrodes to measure the electrical activity of the heart. If an abnormal heartbeat is detected, the user is advised that a high-energy shock is necessary. The user interface provides voice and text/icon prompts to guide the user through the rescue process, including CPR. The devices are intended for use by minimally trained users to initiate the rescue process until first responders arrive.

Scripps Research Institute receives grant to study vaccines

Scientists at The Scripps Research Institute have received a $12 million grant from the Bill & Melinda Gates Foundation to improve flu and malaria vaccines. With the funding, the team will expand their studies of antibodies that can neutralize many strains of malaria and influenza. Past Scripps Research studies have shown these "broadly neutralizing antibodies" can serve as guides for designing promising vaccine candidates against influenza, AIDS, and other diseases.

ATS Foundation, ResMed team up on new fellowship

The ATS Foundation has announced a new ATS Foundation/ResMed Research Fellowship in Sleep-Disordered Breathing and Positive Airway Pressure (PAP) Therapy. The award will provide funding for two years in the amount of $100,000, provided by ResMed, a global leader in connected health with more than four million cloud-connected PAP devices monitoring patients every night. "When 85% of people with sleep apnea still aren't diagnosed, ResMed is proud to support any research effort to accelerate finding, testing, and treating them so they can enjoy a full night's rest, better overall health, and a significant reduction of life-threatening risks," noted ResMed CMO Carlos M. Nunez, MD.

BI, HealthPrize Technologies expand RespiPoints program

Boehringer Ingelheim and HealthPrize Technologies have expanded the RespiPoints digital support program to include anyone taking one of several Boehringer Ingelheim medicines, including select medicines available in the Respimat inhaler. The RespiPoints program is a free web- and mobile-based program that engages and rewards patients through education about their condition and support to take their medicines daily as prescribed by their health care provider. Activities include reporting daily medicine taking, verifying monthly refills, reading educational information and insightful tips, and completing weekly quizzes and surveys. Eligible patients can sign up at www.MyRespiPoints.com.

National Cancer Institute grant to establish lung cancer screening center

Researchers from

the Perelman School of Medicine at the University of Pennsylvania, the Institute for Health Research at Kaiser Permanente Colorado, Kaiser Permanente Hawaii, the Henry Ford Health System in Detroit, and Marshfield Clinic Health System in Wisconsin, have received a five-year, $15.5 million National Cancer Institute (NCI) grant to improve lung cancer screening. The funding will establish the Center for Research to Optimize Precision Lung Cancer Screening, one of three specialized cancer screening research centers under the Population-based Research to Optimize the Screening Process II initiative by the Healthcare Delivery Research Program at NCI. The center will develop a lung cancer screening data repository to conduct research on developing and testing ways to prevent underuse, overuse, and misuse of screening for lung cancer nationally.

Royal Philips announces new data supporting HOT plus HMV for hypercapnic COPD patients

According to Royal Philips, new data suggest that combining home oxygen therapy (HOT) with home noninvasive mechanical ventilation (HMV) as a treatment for chronically hypercapnic COPD patients is more effective and less expensive than HOT alone. In a comparison of the accumulated costs of devices, doctor visits, medication, and hospitalizations, HOT-HMV exhibited an average annual cost savings of $3,927 per patient vs. HOT alone. "These findings support the use of oxygen paired with noninvasive ventilation in the home to improve the patient experience and pave the way for more cost-effective care," said Dr. David White, chief medical officer, Philips. The new data were presented at the American Thoracic Society's 2018 conference.

Technion launches new wearable monitors

Researchers from the Wolfson Faculty of Chemical Engineering at the Technion-Israel Institute of Technology have developed an integrated system for the early diagnosis of diseases using wearable monitors. The energy required for the operation of the monitors is derived from the wearer's body movements and body heat, and the devices are made of advanced self-healing materials that allow for automatic repair in case of a scratch or cut. Precise sensing and advanced analysis tools are also included.

New mode of proton therapy for lung cancer

Researchers from the Beaumont Proton Therapy Center have invented a new mode of proton therapy for lung cancer. The continuous proton arc treatment can significantly reduce the adverse effects of respiration-induced motion during lung cancer treatments and is expected to result in a better and lower dose of radiation to adjacent organs as well. The team presented their findings on the new treatment at the recent European Society for Radiotherapy and Oncology meeting in Barcelona.

ProterixBio reports on blood biomarker studies in COPD

According to ProterixBio, Inc., three clinical studies on the use of blood biomarkers to develop algorithms aimed at informing the care of COPD patients were presented at the recent American Thoracic Society conference. The first found that blood biomarker-based algorithms can predict future exacerbations, indicating that advanced molecular assessments may improve the characterization of a patient's disease activity in advance of potentially avoidable events. The second presentation provided evidence that algorithms based on combinations of blood biomarkers may help identify early-stage patients on the basis of their disease activity. The third found that algorithms utilizing blood biomarkers showed potential for identifying the frequent severe exacerbator phenotype.

Prometic Life Sciences reports new clinical data on IPF drug

New clinical data assessing the effect of Prometic Life Sciences Inc.'s lead small molecule candidate, PBI-4050, on blood biomarkers for the treatment of idiopathic pulmonary fibrosis (IPF) were presented at the recent American Thoracic Society conference. "Our evaluation of the effect of PBI-4050 on blood biomarkers linked to the fibrotic process in IPF patients has shown the positive impact the drug candidate has on antifibrotic pathways," Lyne Gagnon, PhD, Prometic's vice president of R&D Preclinical, was quoted as saying. "These most recent data demonstrated that PBI-4050 was well-tolerated when given alone or in combination with nintedanib or pirfenidone, two marketed IPF treatments. In addition, PBI-4050 given alone, as well as in combination with nintedanib, showed promise in stopping the decline in lung function, something that current treatments have been unable to achieve."■

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

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RC Currents

IN THE NEWS

Understanding Ebola

The Ebola epidemic that swept through Liberia, Guinea, and Sierra Leone from late 2013 to early 2016 was caused by the Makona strain of the virus (EBOV-Makona). Early on in the epidemic, scientists thought the genetic diversity of this strain would result in more severe disease and greater disease transmissibility than prior strains. The epidemic was severe, but new research from the National Institutes of Health suggests that genetic diversity was not the reason why.

Using two different animal models, the investigators determined that certain mutations stabilized early on during the epidemic and did not alter Ebola disease presentation or outcome. The finding supports previous results from molecular sequencing that also showed the diversity of EBOV-Makona did not significantly impact the course of disease. The researchers call for more study on non-viral factors such as population mobility, available health care, and virus persistence in survivors, which could explain the increased case numbers and fatalities in the 2013–2016 outbreak. The study results were published in a recent edition of *Cell Reports*.■

Transitions

In the lives of AARC members

AARC member Linda Ann Rhines passed away. She served as a respiratory therapy instructor at Orange Coast College in Costa Mesa, CA, as well as a supervisor at Queen of the Valley Hospital in West Covina. She had also worked at Mission Hospital alongside her husband, Charles Rhines (also an RT). In San Diego, she worked for Vencor managing multiple facilities. Charles has established a respiratory therapist scholarship in her name, which is awarded to a second-year student at the college.■

Data Shows Proximity to Roadway Affects Childhood Asthma

In a study published in the *Journal of Allery and Clinical Immunology*, Boston researchers found long-term exposure to traffic-related pollution significantly increases the risk of pediatric asthma.

The investigators reached that conclusion after analyzing data from 1,522 Boston-area children born between 1999 and 2002 whose mothers had enrolled in a long-term study to learn how behavioral and environmental factors impact children's health. Using mapping technology, they determined the distance between the children's homes and the nearest roadway, then linked those findings to satellite-derived atmospheric data to determine exposure to fine particulate matter, which originates from fuel combustion.

Their study results showed that living near a major road increased the risk for childhood asthma in all age ranges. Specifically, children living less than 100 meters from a major road had nearly three times the odds of current asthma by 7–10 years of age compared with children living more than 400 meters from a major road. ■

Canadian Study Challenges Liberal Oxygen Administration

Liberal administration of oxygen to patients who are acutely ill may be doing more harm than good, report Canadian researchers who conducted a meta-analysis involving 25 randomized controlled trials encompassing more than 16,000 adult patients with sepsis, stoke, trauma, emergency surgery, heart attack, or cardiac arrest.

Compared to conservative use of oxygen administration, liberal administration increased in-hospital death by 21% and the more supplemental oxygen patients were given, the higher their risk was for death. The researchers estimated one additional death for every 71 patients treated with a liberal oxygen strategy. However, no link was seen between the liberal administration of oxygen and other factors, such as infections or length of hospital stay.

"Our findings are distinct from the pervasive view that liberal oxygen therapy for acute illnesses is, at worst, harmless," explained study author Waleed Alhazzani, MD, MSc, FRCPC. The study was published in a recent edition of *The Lancet*. ■

Share Your Wisdom

The *AARC Times* "Reflections" column highlights the careers of AARC members who have recently retired from the profession. We'd like you to look back at your life in the respiratory care profession and tell us what it meant to you and why. Start brainstorming some ideas and then submit your story to *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org. ■

Members: 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 her 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 for AARC members to share them. Share your story by contacting *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org. ■

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. ■

Differing Opinions on Asthma Meds Adherence

What's behind nonadherence to asthma medications in children? New research out of Johns Hopkins found that kids, caregivers, and clinicians all have different opinions.

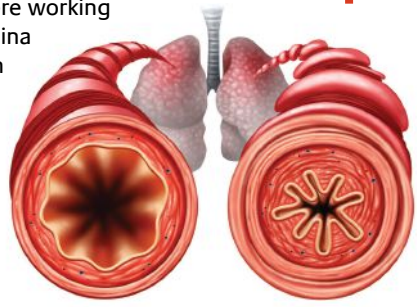
The study was conducted among 50 child-caregiver pairs and 34 clinicians who participated in in-person or telephone interviews. Kids in the study were 7–17 years old and enrolled in a Medicaid-managed care organization. Interviews took place within 12 months of the child's emergency department visit for asthma. Children and caregivers also completed the Asthma Control Test (ATC). The study was published in a recent edition of the *Journal of Asthma*.

Results showed —

- ACT scores reported by children and caregivers averaged 14 and 18, respectively.
- Although 58% of children and 48% of caregivers reported that the child missed only one to two doses of medication each week, pharmacy records based on fills of daily vs. rescue medications showed that 60% had less than ideal medication refill frequency.
- All groups cited forgetfulness and running out of medication as top barriers to medication adherence, but children were more likely than caregivers to report medications running out as a reason, and clinicians were more likely than both groups to report it as a reason.
- Clinicians were also more likely than children to cite "being a pain to take" as a reason for nonadherence, and more likely than caregivers to cite forgetfulness as a reason.
- Some children acknowledged being embarrassed to take their medication.
- Care triads were least likely to agree on whether inconvenience was a reason for noncompliance, with only 21% of triads agreeing.
- Similarly, only 27% of triads agreed about whether the child being worried about taking a medication every day was a reason for nonadherence.
- Children rarely "blamed" anyone else for missing doses, but caregivers discussed the child's forgetfulness and distractions.
- Clinicians mentioned potential lack of caregiver supervision or too much responsibility given to young children as barriers to medication adherence. ■

New Asthma Treatment May Be on the Horizon

Through a study that examined more than 6,000 compounds, researchers from Rutgers New Jersey Medical School who were working with investigators in China identified a drug known as TSG12 that could be a new treatment for asthma.



The study began with the discovery that the metallothionein-2 (MT-2) protein relaxes airway smooth muscle cells and opens the airways, allowing patients to breathe. However, the presence of MT-2 in asthmatic lung tissue was more than 50% lower than in normal lung tissue, and mice without the MT-2 protein were twice as susceptible to asthma. Treating the mice with MT-2 improved breathing difficulties related to asthma.

Developed from the MT-2 protein, TSG12 relaxes the airway smooth muscle cells, expands the pulmonary airways, reduces pulmonary resistance, and, in this study, was more effective than current treatments approved by the Food and Drug Administration, including the bronchodilator inhalers used by nearly all asthma patients.

"We found that the TSG12 used in the study is both nontoxic and more effective in reducing pulmonary resistance and could be a promising therapeutic approach for treating asthma," according to study author Luis Ulloa, PhD, from Rutgers. "It is not a cure, but I think this treatment will give people a lot of hope."

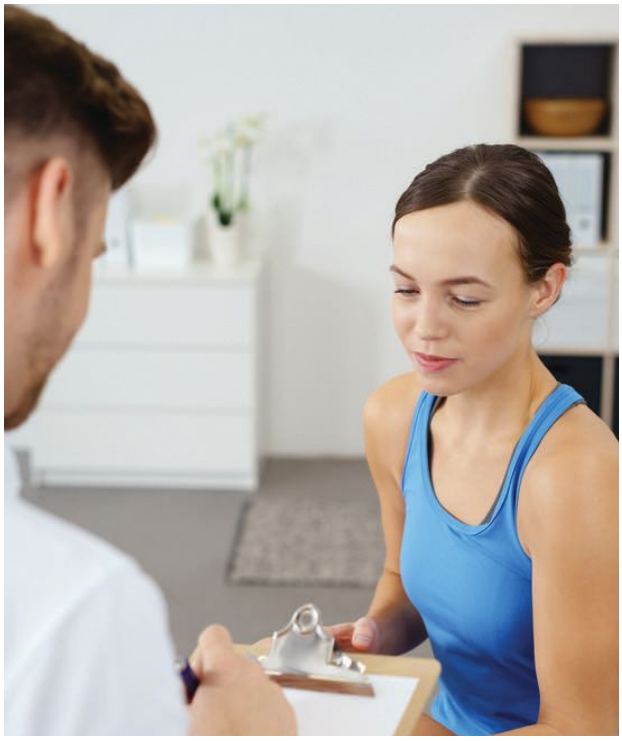
The study appeared in a recent edition of *Science Translational Medicine*. ■

Post-ICU Clinic Helps Patients Continue Their Recovery at Home

A new clinic at Michigan Medicine is aimed at helping patients who have survived a critical illness continue their recovery at home. Patients make their first visit to the Post-ICU Longitudinal Survivor Experience Clinic two to four weeks following hospital discharge.

The first appointment includes pulmonary function testing, along with assessments for fitness, mobility, and quality of life. Patients then meet with a pharmacist to go over medications, a social worker for cognitive testing and a review of the quality-of-life surveys, and a physician for a physical clinical evaluation and medical review. Clinicians meet to discuss the results of their respective exams, then hold a joint meeting with the patient to come up with a care plan. A follow-up visit takes place six months later, and telephone and virtual check-ins occur in the interim.

"We all celebrate when a patient survives a severe critical illness and is able to go home, but really that's only half of the battle," said Jakob McSparron, MD. "The next step is thinking about follow-up care and how to help them recover effectively and keep them from being hospitalized again." ■



Hookah Smoking Packs a Punch

Most anti-tobacco efforts are designed to get people who smoke traditional cigarettes to quit and encourage young people to never pick up the habit. A new study out of the University of Pittsburgh suggests that more attention should be paid to hookahs, particularly where younger people are concerned.

They analyzed data from 3,254 adults ages 18 to 30 who were randomly selected in March 2013 to complete a questionnaire about their tobacco use. In the 30 days before completing the survey, about 1 in 20 participants reported hookah smoking, and about 3% reported smoking both cigarettes and hookah. Cigarette smoking was reported by 23.4%.

While significantly fewer people smoked hookahs, the authors note that smoking one cigarette involves 10–12 puffs, each containing 50 mL of smoke. Conversely, one 45–60-minute hookah session can involve as many as 100 inhalations of about 500 mL each. Overall, hookah smoking accounted for 54.9% of the smoke, 20.9% of the tar, 10.3% of the carbon monoxide, and 2.4% of the nicotine consumed by the participants in the previous 30 days. *Tobacco Control* published the survey results. ■

OSA May Be Underdiagnosed in Older People

According to researchers from the University of Michigan, 56% of people 65 and older are at high risk for obstructive sleep apnea (OSA), but only 8% have been tested for it. That conclusion is based on 1,052 Medicare beneficiaries who completed a series of sleep questions and other surveys as part of the National Health and Aging Trends Study. Among people in the study who were tested for OSA, 94% were diagnosed with the condition. Among that group, 82% were prescribed CPAP.

Study co-author Ronald Chervin, MD, MS, explains, "We still need to learn more about the impact of OSA in older persons more specifically, but the findings of this study suggest a huge, untapped opportunity to improve lives in older years, and perhaps medical costs as well, through more effective diagnosis, and then treatment, of OSA." The study appeared in a recent edition of the *Journal of the American Geriatrics Society*. ■

Lung Disease Is Increasing Among Coal Miners

At a time when on-the-job fatalities due to injuries and accidents have decreased across the board, the incidence of lung disease among coal miners is increasing. A new study in *Risk Analysis* offers some insight into why.

Researchers from the National Institute for Occupational Safety and Health used data from 8,165 mines across the country active from 1996 to 2015. The data revealed 730 cases of lung disease reported from 2006 to 2015. Statistical analysis showed that, for each unit increase in an inspector-observed instance of noncompliance with Mine Safety and Health Administration (MSHA) requirements aimed at reducing the risk of exposure through management practices, there was a 12–14% increase in the probability of that mine reporting a lung disease. For each unit increase in an inspector-observed instance of noncompliance with regulations related to reducing airborne contamination, there was a 10–22% increase in the probability of that mine reporting a lung disease.

"Our study found that mines that comply with relevant MSHA health standards experience a substantially lower number of lung diseases over time," noted lead author Patrick L. Yorio, PhD. "This suggests that a disciplined effort to comply with relevant MSHA requirements can be an effective method to prevent mining-related occupational lung disease." ■

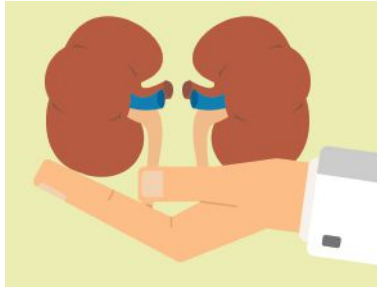
Blame Noncompliance on Financial Hardship

Why do some respiratory care patients neglect to take their medications as prescribed? Researchers from University of Texas Southwestern Medical Center suggest financial hardship may be to blame.

In a study based on 12 focus groups involving people seeking services for low-income individuals, they determined that financial insecurity is the number one reason why people forego the medical care that is prescribed for them. What's more, individuals who can't afford their care are less likely to address that issue with their clinicians, leading those clinicians to believe the individuals are simply choosing to be noncompliant with their care.

"Financial strain is the burden that prevents many low-income patients from being able to take better care of themselves," notes lead author Dr. Oanh Nguyen. "This financial strain can cause nonadherence to physician recommendations that appears to reflect a patient's lack of engagement in care." The study was published in a recent edition of the *Journal of General Internal Medicine*. ■

Transplant Patients Should Avoid Alcohol



In a prospective study that followed 86 lung transplant patients, researchers from Loyola University Chicago found that those who used alcohol prior to the transplant were in the hospital 1.5 times longer than those who abstained from alcohol. They were in the ICU nearly three times longer and were on mechanical ventilation three times longer.

Overall, 34% of the patients reported being moderate drinkers, and 10% tested positive for recent alcohol use at the time of their transplants. No differences were seen in dysfunction of the transplanted lung between recent drinkers and nondrinkers, but recent alcohol use was linked to post-transplant kidney injuries, rejection episodes, and atrial arrhythmias. The study was published in a recent edition of *Clinical Transplantation*. ■

Three Wishes Program Eases End of Life in the ICU

Ronald Reagan UCLA Medical Center is the first hospital in the nation to adopt the Three Wishes Program, an initiative aimed at improving the end-of-life experience in the ICU for patients, families, and even clinicians. Once there is a 95% chance the patient will die in the ICU, patients and families can ask for three wishes that will make the transition easier or more meaningful. Since the program went into operation in December 2017, requests have ranged from bringing in a harpist to play classical music as a person neared death, to personalizing the patient's room with photos, music, and lighting, to creating keepsakes such as thumbprint keychains or framed word clouds.

"When the staff can help honor the person, it brings a sense of relief and helps us cope with their dying process, too," explained Medical ICU Nursing Director Sherry Xu.

Do Mild Asthma Patients Need Daily Controller Meds?

Statistics show up to 80% of people with mild asthma don't take their daily controller medications as prescribed. A new study in *The New England Journal of Medicine* suggests they might not need them.

The international group of researchers looked at more than 3,800 patients from Canada, China, the United Kingdom, Australia, Brazil, South Africa, and other nations who were randomly assigned either a twice-daily placebo plus as-needed terbutaline, a twice-daily placebo plus budesonide-formoterol used as needed, or a twice-daily maintenance budesonide plus terbutaline used as needed. Budesonide-formoterol used as needed was superior to terbutaline used as needed for improving asthma symptom control, and it also reduced the risk of an asthma attack by more than 60%. While the twice-daily budesonide maintenance therapy was better for symptom control, it did not decrease the risk of an asthma attack any more than budesonide-formoterol used as needed.

"If patients could remember to take their maintenance budesonide treatment and follow it carefully, they would get the best day-to-day symptom control, but the risk of exacerbation was the same as if they used the combined budesonide and formoterol as needed," says study author Dr. Paul O'Byrne, from McMaster University. "In addition, the amount of steroids used was much less when the combined inhaler was used, because the patient did not need to take it every day."

A Passing Fad?

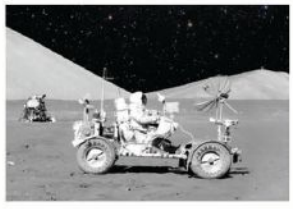
More people are trying e-cigarettes. But that doesn't mean they are continuing to use these products. According to University of Iowa investigators who analyzed data from more than 101,000 Americans in the National Health Interview Survey, the number of adults who tried e-cigarettes increased from 12.6% in 2014 to 13.9% in 2015 to 15.3% in 2016. But the number who said they currently use e-cigarettes "every day" or "some days" decreased from 3.7% to 3.5% to 3.2%, respectively.

The decrease in current use of e-cigarettes was most significant in those older than 65: women, non-Hispanic whites, people with low incomes, and current cigarette smokers. While fewer current cigarette smokers reported using e-cigarettes, use of e-cigarettes increased among former smokers and among people who had never smoked before trying them. The findings appeared in a recent edition of *JAMA*.

New Procedure May Improve Nasal Airflow

Researchers at the Ohio State University Wexner Medical Center are using a new, noninvasive approach to reshape nasal tissue and help people breathe better. Their Vivaer Nasal Airway Remodeling device delivers radiofrequency energy to the nasal valve area, changing the shape of the cartilage to open up the valve and improve airflow. Computed tomography (CT) scans of the nasal cavity are taken before and after the procedure, allowing the investigators to objectively measure changes in airflow. A clinical trial to gauge the effectiveness of the procedure is underway now. ■

Strange but True . . .



Beam me up: Add "increased risk of lung disease" to the hazards of space travel. Researchers from Stony Brook University found that up to 90% of human lung cells died when exposed to dust particles from simulated moon soil. Long lunar missions could pose a problem for astronauts because the lunar soil sticks to spacesuits and is brought into the inside environment. ■

Brush it off: An antibacterial element commonly found in toothpaste may hold the key to a new treatment for severe infections in people with cystic fibrosis and other conditions. Michigan State University researchers discovered that combining triclosan with the antibiotic tobramycin kills 99.9% of the biofilm that protects the deadly bacteria *Pseudomonas aeruginosa* from more complete eradication. ■

Quitting Smoking Altogether Is Better

Smokers often rationalize their continued smoking habit by declaring that they will simply cut back on the number of cigarettes they smoke each day. That doesn't work, report researchers who analyzed 30 years' worth of data from 3,140 participants in the Coronary Artery Risk Development in Young Adults study. About half were African American, and about half smoked at some point in their lives. They all underwent periodic spirometry to assess lung function and had chest CT scans 15, 20, and 25 years after enrolling.

Results showed that, compared to those who never smoked, stable heavy smokers experienced the greatest decline in FEV_1, and they were 26 times more likely to develop emphysema and nearly eight times more likely to develop obstructive lung disease. Also, compared to stable low-rate smokers (defined as smoking fewer than 10 cigarettes per day on average), higher-rate smokers who had quit preserved more lung function and had a lower risk of developing emphysema.

"We were surprised to find that those who quit had lower disease risk than the group we identified as stable, low-rate smokers, even though those who quit had a greater lifetime exposure to cigarettes," study author Amanda Mathew, PhD, research assistant professor at Northwestern University Feinberg School of Medicine, was quoted as saying. The study was presented at the annual American Thoracic Society meeting. ■

AARC Apex Recognition Program Soon To Start Up Again

The AARC Apex Recognition Award is getting ready to start up for the 2018-2019 season. The program offers recognition to respiratory care departments in acute care hospitals, long-term care facilities, home medical equipment (HME) companies, entry-level educational programs, and dedicated transport teams which have met the AARC standard of excellence for respiratory care departments and facilities.

The AARC initiated the Apex Recognition Award last year to recognize the significant contribution of respiratory therapists and to highlight best practices in respiratory care aligned with evidence-based medicine.

Earning the Apex Recognition Award distinguishes a facility by allowing it to demonstrate its commitment to excellence in professional development, evidence-based care, and patient safety/satisfaction and quality improvement. Also, it showcases the value of respiratory therapists to an organization and community.

APEX 2017–2018

Detailed information about the standards, a list of required documentation, and the registration process are provided in the "Standards and Documentation" found on the AARC website at https://goo.gl/4PPkjH. ■

Long-time RT Gretchen Lawrence Gives Back to Her Profession

Hot Springs makes a splash with healing waters and healing intentions for young RTs

She's been called the "queen of pulmonary rehab" by her peers and with good reason. Longtime respiratory therapist and well-known speaker Gretchen Lawrence, BA, RRT, FAARC, announced the creation of the Lawrence Respiratory Foundation and its Professional Achievement in Respiratory Care (PARC) scholarship this past spring.

The $1,500 scholarship will go to a senior in the National Park College Respiratory Care Program in Hot Springs, Ark., for the fall semester.

Lawrence says that she and her husband retired to Hot Springs and built their dream house on Lake Hamilton a few years ago. They fell in love with the community and the national park. They enjoyed the healing waters and hitting the hot spots on Bathhouse Row, especially the historic Superior Bathhouse Brewery. "This is terrific town," says Lawrence. "There's a wonderful culture here, and I love it."

But anything can be improved upon. After joining the Women's Welcome Club and realizing that it provided only nursing scholarships to local college students, but not respiratory therapy scholarships, Lawrence and husband David Hulett decided to create a foundation and endow a scholarship program of their own. "Nursing gets a huge number of scholarships and a large amount of press," says Lawrence. "I realized my profession was underrepresented."

Lawrence met with Paul Lowe, RRT, MPH, the director of the Respiratory Care program at National Park College, to get more information about the department and its students. She knew that the AARC offered a scholarship program for respiratory care students, as did most state societies, but Lowe confirmed that no other financial resources were available for the students that his program served.

"This is a worthy cause," says Lawrence. "It didn't take much thinking to decide that this was the right thing to do." The PARC scholarship is the only such grant in Hot Springs, a city of approximately 37,000 people. It raises the bar for scholarship awards and raises the profile of National Park College's Respiratory Care Program. "We're incredibly grateful to the Lawrence Respiratory Foundation for its generosity and support of our students," says Lowe. "The scholarship will give a deserving student the opportunity to earn skills that will serve the medical community after their graduation."

The Lawrence Respiratory Foundation (www.lawrencerespiratoryfoundation.org) is an all-volunteer organization that sends 100 percent of all donations directly into the PARC scholarship. The $1,500 award will go to a senior student who has achieved a 3.0

average in all courses and is entering the second year of the education program. "In order to apply, they have to have two recommendation letters and write a letter as to why they believe they deserve the scholarship," says Lowe.

The PARC scholarship is available to a new senior at National Park College and is awarded before the start of the fall term. Other requirements include that the student be a member of the American Association for Respiratory Care and also a member of the Arkansas Society for Respiratory Care. Lawrence is particularly interested in finding scholarship finalists who will be good representatives of the respiratory care profession.

"Without patrons willing to support medical education, there are students who would be unable to pursue an advanced degree," says Lowe. "We're thrilled about the Lawrence Foundation scholarship and very excited for our school."

Lawrence is an advocate of giving back to the profession and paying forward to those in need. "You can contribute to your profession in a lot of different ways. Honor your profession by becoming the best that you can be."

She says she would not have created the foundation or the scholarship if she hadn't had a very strong belief in the respiratory therapist at the bedside. "When a student comes into the program, I hope that they are as fortunate as I was in finding mentors. Those people instilled in all of us how important it was that we become the best we can be and contribute to our profession." She notes that the foundation hopes to expand the scholarship in the future. "We want to encourage master's degrees and doctorate degrees in respiratory care." ■

Calendar of Events

AARC & State Society Programs

August 13 – 14, 2018
Columbus, OH
2018 OSRC Annual Conference
Contact: staff@pacainc.com or www.osrc.org

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

September 17 – 19, 2018
Honolulu, HI
5th Annual Hawaii Society for Respiratory Care Conference
Contact: https://hawaiircps.org/

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

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