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Lynne Leach, RRT, RPFT, Wins the AARC Photo Contest

Ohio RTs Gather To Celebrate the RC Profession's Evolution

The AARC's photo of the year was taken by Lynne Leach, RRT, RPFT, and shows her patients, Ruth Ann and Barb, rolling their way into the pulmonary rehab program at McLaren Hospital in Flint, MI.

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The ARCF Supports Respiratory Care Research and Education

by Thomas J. Kallstrom, MBA, RRT, FAARC

Do you know that there is a not-for-profit foundation whose sole purpose is to ensure a mechanism for support and recognition of those who practice in the profession of respiratory care? There is, and it's called the American Respiratory Care Foundation (ARCF). I ask this question because when the AARC surveyed our members a few years ago and asked the same question, we were astonished to learn that only 43% of our members had any idea of the ARCF's existence. That was on us, and we promised to work harder to be sure the presence of the foundation is better known.

The ARCF's mission is to promote respiratory health through the support of research, education, and patient-focused philanthropic activities in respiratory care. It also seeks to educate the public about respiratory health, and to assist in the training and continuing education of health care providers. Formed in 1974 as the American Respiratory Therapy Foundation, it evolved into the American Respiratory Care Foundation in 1986. Many respiratory care students, therapists, researchers, and others have benefited from its philanthropic generosity for over 40 years.

The ARCF's Board of Trustees is composed of 14 members, including two emeritus Trustees, who conduct the business and manage the decisions of the Foundation. The Board includes a good cross-section of respiratory therapists, physicians, and business leaders, as well as an attorney and a public member. ARCF Trustees are nominated by the AARC Board of Directors and the National Board for Respiratory Care (NBRC). The Board of Trustees is ratified by the ARCF Board of Directors.

about the author…

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

As part of its mission, the Foundation supports the international growth of respiratory care. An International Fellowship program, initiated in 1990, provides support for clinicians from around the globe to come to the United States for two weeks to observe two clinical and/or academic programs. Their visit culminates with the AARC International Congress. This program enhances cooperation, dialogue, and knowledge exchange for invitees to the United States. Some of the international goals include:

- Promote the exchange, development, and coordination of the art, science, and application of respiratory care.
- Allow meaningful interaction and cooperation among multi-national colleagues in a political and humanitarian context.
- Enhance the awareness and understanding of the respiratory care profession and its vital role on the health care team.
- Provide encouragement and assistance to those countries seeking to establish the respiratory care profession as an independent profession.
- Provide encouragement and assistance to those countries seeking to gain legal recognition of the respiratory care profession.
- Provide encouragement and assistance to countries seeking to establish professional associations for respiratory therapists.

Over the last 27 years, the International Fellowship program has hosted 163 clinicians from 65 different countries. Many have gone on to develop or enhance existing respiratory care programs in their home countries.

As part of the ARCF's mission to give back to the respiratory care profession, the Foundation gives out awards, grants, and fellowships annually at the AARC Congress. They include:

- Four Education Recognition Awards for students who are currently enrolled in accredited respiratory care education programs
- Two post-graduate Education Recognition Awards for respiratory therapists pursuing an advanced degree
- Four research fellowships for researchers whose high-quality abstracts are accepted for presentation at the AARC Congress
- Seven achievement awards for professionals to recognize their dedication and commitment in the respiratory care profession
- Two literary awards for people whose papers were published in the science journal Respiratory Care
- Four research grants
- Four named/restricted awards

Additionally, the ARCF funds the annual Respiratory Care Journal Conference. The 56th conference was this past July. We have found that these conferences make a significant impact on the practice of our profession. The Journal Conferences allow us to gather noted scholars and clinicians to present the latest developments in pulmonary science. The July conference was focused on respiratory medications for COPD and adult asthma. The proceedings of the conference will be published next year in Respiratory Care.

For the ARCF to continue to grow and offer these awards, grants, and fellowships, it relies on donations from industry, AARC, NBRC, and individuals. Some of our members have thought outside of the box to find ways to support the Foundation. A good example is Craig Smallwood, RRT, a respiratory therapist in Boston who decided to garner pledges for a 583-mile bike ride he and his father took last summer. He exceeded his own expectations and brought in more than $4,000 to the ARCF.

The Foundation also holds an annual fundraiser at the AARC Congress. This year it will be on October 3, 2017, at Lucas Oil Stadium in Indianapolis, where the Colts play. Year after year, support for this event grows, as do the donors and attendees. We would love to see you there this year as we seek to raise money so that the ARCF can continue to give back. If you cannot attend, I encourage you to make a donation electronically at https://fs20.formsite.com/advertisingaarc/form21/index.html.

It's great to see the ARCF grow in its ability to provide support and recognition of those who deserve it so much. Please join us and be a part of ensuring that our profession will continue to have the support from the ARCF as it gives back to the profession. Please visit the ARCF web page, where you can get even more information about the foundation: http://www.arcfoundation.org.

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Job Analysis Study for the Neonatal/Pediatric Specialty

by Robert C. Shaw, Jr., PhD, RRT, FAARC

The NBRC sponsored its fifth job study of competencies in the neonatal/pediatric specialty in 2016. Study results culminated in a modified design for test forms that will be implemented in October 2018. Details about the study are summarized in this article.

Methods

The study was directed by an eight-member NBRC advisory committee led by chair Linda A. Napoli, MBA, RRT, RRT-NPS, RPFT. Membership of the committee was supplemented by Bradley Kuch, RRT-NPS, who had been appointed by the AARC. The committee convened in spring 2016 to design a survey and plan how to solicit respondents. A final survey item permitted a respondent to forward a link to a colleague in an effort to snowball the sampling, which would increase the number of respondents from the population. The committee decided to force a response to each item containing a task statement before a respondent could move to the next page in an effort to minimize missing responses.

The committee sent solicitations to populations of current neonatal/pediatric specialty credential holders from within the NBRC database; members of the Children's Hospital Association; and members of the AARC Management and Neonatal-Pediatrics Specialty Sections. The number of potential respondents was 12,363 after subtracting inactive email addresses and people who opted out. Solicitations were emailed starting on June 24th and concluded on July 6th. Snowball referrals continued through July 25th. Reminders were sent on August 1st and 8th. Access to the survey was closed on August 15th.

about the speaker...

Robert C. Shaw, Jr., PhD, RRT, FAARC, is assistant executive director of the National Board for Respiratory Care.

Survey response quality

One thousand five hundred seventy-nine (1,579) people opened the emailed survey. However, the chairperson and vice chairperson decided to exclude respondents who had given a response to less than 100% of the task statements, which left 1,419 sets of responses to study.

The 12% rate of response was expected but left an opportunity for nonresponse bias. However, the committee observed that the amount of error reduction that would have occurred had there been more respondents would have been minimal. Therefore, they decided to proceed with the available sample while remaining sensitive to potential nonresponse bias.

The committee evaluated the intraclass correlations and coefficient alpha values associated with task ratings as organized across two content domains. The lowest intraclass correlation was .998 and the lowest coefficient alpha was .942, which respectively satisfied the committee regarding the likelihood of observing the same ratings from other potential samples from the population and the consistency of ratings within domains.

Nearly all (99%) survey respondents indicated that the list of tasks was adequate in covering the breadth of content that a specialist should be expected to master. The committee concluded that it was unlikely that they had left out any critical task based on this result.

Next, the committee evaluated the demographic characteristics of survey respondents. The evaluation culminated in the committee's conclusion that respon-

dents' characteristics had matched their understanding of the population. If case representation issues had gone undetected, the committee planned to make use of responses that were clustered by demographic subgroups while giving the mean of ratings about importance from each subgroup the opportunity to exclude tasks from examination content.

Identifying critical tasks

Survey respondents selected among five options linked to the following question:

Regardless of how often it is done, how important is the performance of this task to the job of a respiratory therapist who provides neonatal/pediatric specialty care in your institution?

One of the options was "not performed," which permitted the committee to observe information about the extent to which a task was a part of respondents' practices. Responses to the other options permitted evaluation of whether a task that was performed was low or high in importance. The committee made two

Table 1. Content and Cognitive Level Specifications

Examination for the Neonatal/Pediatric Specialty	Items				
		Cognitive Level			
Content Area	Ethics	Recall	Application	Analysis	Totals
I. COMPETENCIES SHARED BETWEEN CRITICAL CARE AND GENERAL CARE		**10**	**32**	**17**	**59**
A. Assess Patient Information		1	5	7	13
B. Evaluate Pulmonary Status		0	1	1	2
C. Assess and Manage Airways		1	2	0	3
D. Select and Manage Equipment		1	6	0	7
E. Facilitate Procedures and Evaluate Efficacy		1	2	0	3
F. Manage and/or Anticipate Effects of Medication Administration		1	5	4	10
G. Anticipate Care Based on Laboratory Results		1	3	2	6
H. Anticipate Care Based on Imaging and/or Reports of Imaging		0	1	2	3
I. Manage Care Based on Nutritional Status		1	1	0	2
J. Assist with or Perform Resuscitation		1	1	0	2
K. Prepare for Disaster and Mass Casualty Events		1	2	0	3
L. Interact with Members of an Interdisciplinary Team		0	1	1	2
M. Evaluate Patient and Family Understanding of Education		1	2	0	3
II. COMPETENCIES SPECIFIC TO CRITICAL CARE		**4**	**29**	**28**	**61**
A. Evaluate Pertinent Information		1	2	1	4
B. Assess and Manage Airways		0	6	2	8
C. Manage Specialty Gas Administration		0	2	2	4
D. Manage Ventilation and Oxygenation		1	7	16	24
E. Facilitate Procedures and Evaluate Efficacy		1	4	4	9
F. Manage and/or Anticipate Effects of Medication Administration		0	2	1	3
G. Prevent Hospital-Acquired Conditions		1	4	1	6
H. Manage End-Of-Life Care		0	2	1	3
Totals	**3**	**14**	**61**	**45**	**120**

passes through the task list based on information from the whole sample. The first pass involved task extent-in-practice information. The second pass involved task importance information. Twelve subgroup-driven passes also provided opportunities to exclude tasks based on importance information. Of the 104 tasks the committee evaluated, 103 survived the 14 passes through the list.

Designing the examination

Examination scores have been sufficiently reliable, so the committee decided to leave the number of scored items at 120. After evaluating information from survey respondents about how the major content domains should be weighted relative to one another on an examination, the committee solidified item counts for the two major content domains and the 21 minor content domains into which tasks had been organized within the survey.

The committee subdivided item counts by three cognitive levels: recall, application, and analysis. Three items will appear on each test form that engage candidates' evaluations of ethical principles in addition to content domain and cognitive level linkages.

After observing survey results regarding the prevalence of care for patients as defined by a list of conditions and disorders, the committee specified target item counts along with a minimum and maximum for each target. The remaining items will be about no specific disorder, which will be labeled as general. Each

Table 2. Additional Specifications by Patient

Condition or Disorder	Item Counts Across the Examination		
	Target	Acceptable Range for Each Test Form	
		Minimum	Maximum
GENERAL – No specific condition or disorder	29	24	34
NEO PULMONARY (neonatal pulmonary, e.g., meconium aspiration, pneumonia, persistent pulmonary hypertension of the newborn)	9	7	11
INFECT DISEASE (infectious disease, for example, pneumonia, croup)	9	7	11
CHRONIC LUNG (chronic lung disease of prematurity)	9	7	11
ASTHMA	9	7	11
PREMATURITY (prematurity acute phase, for example, surfactant-deficiency apnea)	9	7	11
BRONCHIOLITIS	7	6	8
CON DEFECTS (congenital defects that require surgical correction)	5	3	7
CON HRT DISEASE (congenital heart disease)	5	3	7
NEUROLOGIC (e.g., seizures, brain tumors, hydrocephalus)	5	3	7
PED AIRWAY (pediatric airway, e.g., tracheomalacia, vocal cord paralysis, vascular ring)	3	2	4
IMMUNOCOMPROMISED	3	2	4
SHOCK	3	2	4
TRAUMA	3	2	4
HEART FAILURE	3	2	4
CYSTIC FIBROSIS	3	2	4
NEUROMUSCULAR (e.g., spinal muscle atrophy, muscular dystrophy)	3	2	4
SLEEP RELATED (sleep-related disorders, e.g., obstructive sleep apnea, central hypoventilation)	2	1	3
INHALATION (inhalation injuries)	1	0	1
Total	**120**		

item specification decision culminated in the information displayed in Table 1 and Table 2, which describe examination design details.

Summary

The committee designed a survey to collect information that it expected to use while making decisions about what future examinations should cover and how those examinations should be designed. Groups representing persons involved in the specialty were identified so they could be solicited to respond to the survey.

After evaluating the quality of the survey responses as compared to the intended use of the information within this study, the committee decided to proceed. They decided first how it would systematically identify critical tasks that would become stimuli for test items. Then item-count specifications were created to distribute examination content across 21 content domains, with two domains about ethics, three levels of cognition, and 19 patient disorders.

The first test forms under the new system will be implemented in October 2018.

Contact the NBRC

The NBRC Board of Trustees and its committees are interested in your questions, comments, and concerns. You may contact the NBRC by email at nbrc-info@nbrc.org, by phone at (888) 341-4811, or visit the NBRC website at www.nbrc.org. ■

What Is Health Literacy and Its Importance in Patient Education?

by Jerry A. O'Ryan, BS, RRT, RCP

Among the critical factors supporting a successful post-discharge outcome in a patient's COPD care regimen is the ability to assimilate and carry out the health care provider's orders, particularly respiratory therapy instructions, prescription compliance, and prompt recognition of signs of a potential pulmonary exacerbation. Health literacy is the cognitive compilation of the patient's skill with basic reading and synthesizing of words, directions, and simple math skills (health numeracy) that enables successful completion of a given health care task, eg, "take one pill twice a day." Healthy People 2010's oft-cited definition is:

The degree to which individuals have the capacity to obtain, process, and understand basic health information services needed to make appropriate health decisions.

The problem

Multiple studies have pointed out a relationship between patients' health literacy and the resultant compliance level, which can be a contributing factor to a significant health event and may lead to a need for emergency health care or rehospitalization within 30 days of initial discharge. Proper assessment of a patient's health literacy allows the caregiver to make the necessary adjustments to the teaching style and level to achieve maximum compliance. One study of Medicaid patients revealed those reading at the lowest grade levels had average annual health care costs of $12,974 compared with $2,969 for the overall population study.[1] Estimated costs attributable to poor health literacy resulting in less-than-effective health care is approximately $150 billion in 2015 dollars. The need for urgent care or outright hospital readmission may or may not be a direct cause of the primary diagnosis; however, overall health literacy deficiency, poor pharmaceutical adherence, or other self-assisted care issues in the home certainly can be contributing factors in the COPD patient's decline.

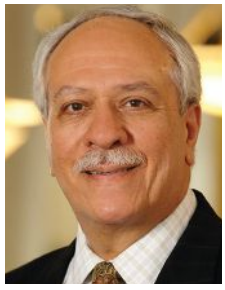
Unfortunately, the prevalence of low health literacy and numeracy is common, with 33% of patients over age 65 having low or only marginal health literacy. Patients with poor health literacy levels experience a complex array of communication difficulties, which may lead to poor health outcomes. As a result, increased hospitalization rates, worsening of existing medical conditions, or presentation of new medical conditions may occur.[1]

Factors in assessing patients' health literacy

Health literacy/numeracy is not simply a matter of an individual's reading level and basic arithmetic skill set. Other factors play an equally key role in the overall umbrella of health literacy, including:

1. Culture, ethnicity, socioeconomic level, gender and race, e.g., Blacks and Hispanics may experience a lower health literacy level due to lack of access to adequate education. Cultural beliefs may covertly influence how some ethnic groups receive and act on health information.
2. The proliferation of computers and access to social media also play a more current role in that many individuals seeking health and wellness information want to access it quickly (but often receive erroneous information) from these electronic sources.
3. Prescription drug package inserts and durable medical equipment and respiratory literature are

about the author...



Jerry A. O'Ryan, BS, RRT, RCP, is currently an MPH candidate at Kent State University College of Public Health. He serves on the Sinclair Community College Foundation Board of Trustees and as a board advisor to their new public health degree program. He authored *Pulmonary Rehabilitation: From Hospital to Home* and was co-editor/author of *Home Respiratory Care*.

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"If your patient cannot read and comprehend basic information on an ice cream nutrition label, chances are he may be at risk for health literacy problems."

written at a higher health literacy level than the majority of patients can understand.

The health care system has a primary responsibility to provide health information and advice to the patient at a manageable level for the individual. The American Medical Association paid homage to the concept of patients' health literacy as early as 1999. It is only beginning to address this issue in medical school training as a necessary skill set.

Two evaluation tools exist to determine a patient's health literacy level as well as assess grade-level measurements of patient health care literature. REALM is a medical-term recognition and pronunciation test to screen adult reading comprehension in the clinical setting. Administered and scored in under three minutes, the participant reads from a list of common medical terms typically encountered in caring for oneself. TOFHLA consists of a mix of numerical and reading comprehension evaluations and draws on commonly used materials found in health care settings. The aim of this test is to measure the patient's ability to understand specific tasks, such as monitoring blood glucose, keeping clinic appointments, obtaining financial assistance, and following directions for taking medicines from a pill bottle. An abbreviated version called the S-TOFHLA takes only 7–10 minutes to administer compared to the full TOFHLA at about 22 minutes.[2]

Practical approaches to evaluating health literacy in the clinical setting

While the respiratory therapist educator educator may not have time to perform a comprehensive health literacy evaluation, opportunities present themselves throughout the patient's hospital stay to determine a realistic and clinically useful assessment level. Here are some tips:

Health literacy assessment begins at admission. Three questions from the 16-question S-TOFHLA were asked in a Veterans' Affairs preoperative clinic, which can likewise be asked of the patient in the admissions phase. These three questions were considered effective in assessing inadequate health literacy in this population. The three questions, using a Likert scale and, asked in a sensitive, non-embarrassing manner, are:

- "How often do you have someone help you read hospital materials?"
- "How confident are you in filling out medical forms by yourself?"
- "How often do you have problems learning about your medical condition because of difficulty understanding written information?"[3]

Health literacy assessment can occur at bedside or in the pulmonary clinic. Pfizer's Newest Vital Sign (NVS) tool cleverly uses an ice cream nutrition label (we all like ice cream!) to ask six simple questions and takes only about three minutes.[4]

Respiratory Glossary. To help the patient and family caregivers decipher terms like "COPD," "lobe," "exacerbation," etc., a simple, hand-crafted dictionary of terms with illustrations defining words used most often in medical reports generated by the pulmonologist or used at the bedside by the respiratory educator would be helpful. For example, to demonstrate the "pulmonary tree," the respiratory educator could use a bunch of grapes held upside down to demonstrate the respiratory bronchiole/alveolar system.

Form a Patient Literature Committee. This could be composed of an RT, a nurse, a social worker, and a case manager as the core review group. Most experts agree that materials presented to patients should be at a sixth-grade reading level. Use the SMOG (Simplified Measure of Gobbledygook) or other readability evaluation scales to determine that the level of the educational material you want to present to the patient is appropriate.

Use the teach-back method, also known as the show-me method. This is a classic patient communication evaluation method used in health care to assess patient comprehension of what is being taught. The patient should be able to reiterate the imparted information at a level showing comprehension and the ability to carry out the desired instruction.

Role of the respiratory care educator

Some simple reminders to consider when beginning any instructional period with a patient include being sensitive to the patient's level of comprehension, aiming to teach to that level, conferring with other RT team members and nursing staff to compare health literacy observations of the patient, and always asking the patient, "What is the best way you learn?" ■

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Standing up to Domestic Violence

by Anthony L. DeWitt, JD, RRT, FAARC

By all accounts, Kelei Morris was an accomplished respiratory therapist. She enjoyed her job at a Mobile, AL, health care facility. She was well liked by co-workers and loved by friends.[1]

Kelei died of a gunshot wound to the head in 2015. She lingered in the hospital for two days before dying. One of her friends was right there with her, holding her hand. Kelei died a victim of domestic violence. The man who is alleged to have murdered her was dating her.

Her alleged killer was a nurse. Not just any nurse, a nurse with a prior murder conviction. Yes, you read that right. That murder had been committed in 2002, and the man was convicted of shooting his 17-year-old girlfriend in the head. Even though he was 18, he claimed juvenile status, and the judge gave him a three-year sentence for murder. Juvenile records are sealed. As a result, neither the licensing authority nor the health care provider that hired him knew of his conviction. Apparently, neither did Kelei.

She did know, however, that the relationship she had with the man wasn't working out. She wanted to end things.

Cognitive dissonance is the false belief that because you do not want something to happen, it won't happen to you. It will happen to someone else. For example, smokers often have terrible cognitive dissonance about the potential impact of their addiction. "It won't happen to me!" They can tell you a dozen stories about people who "smoked for 40 years" and died from non-cardiopulmonary causes. Because they do not want to give up their addiction, they ignore the huge body of evidence that shows smokers most often meet their mortality as a result of the noxious products they smoke.

Every single one of us engages in this behavior, in some way or another. But when it comes to our relationships with others, sometimes it becomes a way of life. If you ignore all the bad things that are happening, you can pretend you're happy.

Ignoring domestic violence, however, can be fatal. An average of 20 people are physically abused by intimate partners in the United States every minute. This equates to more than 10 million instances of abuse victims annually.[2] One in three women and one in four men have been physically abused by an intimate partner. Domestic violence is most common among women between the ages of 18 and 24. The statistics for 2002 show that out of 9,102 murder victims, 8.6% were killed by their spouse, 5.5% were sons and daughters killed by a parent, 7.4% were killed by a family member other than their spouse or parent, 7.3% were killed by their boyfriend or girlfriend, and 45.2% were killed by a friend or acquaintance.[3]

Health care practitioners are in a unique situation to see and take action on suspected domestic violence. If you suspect domestic violence, you may be a mandatory reporter in some states. If you fail to report, you could put your license at risk (although usually a physician's determination that domestic violence has not occurred is binding on you). But as important as mandatory reporting is, it comes too late. Damage has been done.

If you are in a domestic abuse situation, you have resources. Both federal and state governments have programs to help. You do not have to live in fear, and if a spouse or significant other is dominating or abusing you, getting help can put an end to a long nightmare.

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.

Likewise, we have an obligation to our co-workers and friends to watch for changes in mood and behavior (withdrawal, becoming reclusive, explaining away bruises by saying they were "clumsy" or "fell"). These could be signs of changes in their home environment that could point to abuse. It may be necessary to get professionals involved.

Most state bar associations have lawyers who volunteer with domestic abuse shelters and agencies and who can help obtain an "order of protection" or a similar restraining order to stop a harasser or abuser from bothering a victim. Prosecutors can prosecute offenders. Police in some states automatically make arrests even when the abused person does not want to place charges.

Hospitals and health care organizations may have more professionals available to deal with this kind of situation than nearly any other employer. In the area of domestic violence, we are all our brothers' and sisters' keepers. ■

References

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Indication

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

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

Important Safety Information

WARNING: ASTHMA-RELATED DEATH

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

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

Please see additional Important Safety Information, including BOXED WARNING, and Brief Summary of Prescribing Information on adjacent pages.

LABA = long-acting beta$_2$-agonist; LAMA = long-acting muscarinic antagonist.

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

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

CONTRAINDICATIONS: UTIBRON NEOHALER is contraindicated in patients with asthma without use of a long-term asthma control medication. UTIBRON NEOHALER is contraindicated in patients who have demonstrated hypersensitivity to indacaterol, glycopyrrolate, or to any of the ingredients.

WARNINGS AND PRECAUTIONS:

WARNING: ASTHMA-RELATED DEATH

Long-acting beta$_2$-adrenergic agonists (LABAs) increase the risk of asthma-related death. Data from a large, placebo-controlled U.S. study that compared the safety of another LABA (salmeterol) or placebo added to usual asthma therapy showed an increase in asthma-related deaths in patients receiving salmeterol. This finding with salmeterol is considered a class effect of all LABAs, including indacaterol, one of the active ingredients in UTIBRON NEOHALER. The safety and efficacy of UTIBRON NEOHALER in patients with asthma have not been established. UTIBRON NEOHALER is not indicated for the treatment of asthma.

Data from a large, placebo-controlled U.S. study in asthma patients showed that LABAs may increase the risk of asthma-related death. Data are not available to determine whether the rate of death in patients with COPD is increased by LABAs. A 28-week, placebo-controlled U.S. study comparing the safety of another LABA (salmeterol) with placebo, each added to usual asthma therapy, showed an increase in asthma-related deaths in patients receiving salmeterol (13/13,176 in patients treated with salmeterol versus 3/13,179 in patients treated with placebo; RR 4.37, 95% CI 1.25, 15.34). The increased risk of asthma-related death is considered a class effect of the LABAs, including indacaterol, one of the ingredients in UTIBRON NEOHALER. No study adequate to determine whether the rate of asthma-related death is increased in patients treated with UTIBRON NEOHALER has been conducted. The safety and efficacy of UTIBRON NEOHALER in patients with asthma have not been established. UTIBRON NEOHALER is not indicated for the treatment of asthma. **Deterioration of Disease and Acute Episodes:** UTIBRON NEOHALER should not be initiated in patients with acutely deteriorating or potentially life-threatening episodes of COPD. UTIBRON NEOHALER has not been studied in patients with acutely deteriorating COPD. The initiation of UTIBRON NEOHALER in this setting is not appropriate. UTIBRON NEOHALER should not be used for the relief of acute symptoms, i.e., as rescue therapy for the treatment of acute episodes of bronchospasm. UTIBRON NEOHALER has not been studied in the relief of acute symptoms, and extra doses should not be used for that purpose. Acute symptoms should be treated with an inhaled, short-acting beta$_2$-agonist. When beginning UTIBRON NEOHALER, patients who have been taking oral or inhaled, short-acting beta$_2$-agonists on a regular basis (e.g., 4 times a day) should be instructed to discontinue the regular use of these drugs and use them only for symptomatic relief of acute respiratory symptoms. When prescribing UTIBRON NEOHALER, the healthcare provider should also prescribe an inhaled, short-acting beta$_2$-agonist and instruct the patient on how it should be used. Increasing inhaled beta$_2$-agonist use is a signal of deteriorating disease for which prompt medical attention is indicated. COPD may deteriorate acutely over a period of hours or chronically over several days or longer. If UTIBRON NEOHALER no longer controls the symptoms of bronchoconstriction; the patient's inhaled, short-acting beta$_2$-agonist becomes less effective; or the patient needs more inhalation of short-acting beta$_2$-agonist than usual, these may be markers of deterioration of disease. In this setting, a re-evaluation of the patient and the COPD treatment regimen should be undertaken at once. Increasing the daily dose of UTIBRON NEOHALER beyond the recommended dose is not appropriate in this situation. **Excessive Use of UTIBRON NEOHALER and Use with Other Long-Acting Beta$_2$-Adrenergic Agonists:** As with other inhaled drugs containing beta$_2$-adrenergics, UTIBRON NEOHALER should not be used more often than recommended, at higher doses than recommended, or in conjunction with other medications containing LABAs, as an overdose may result. Clinically significant cardiovascular effects and fatalities have been reported in association with excessive use of inhaled sympathomimetic drugs. Patients using UTIBRON NEOHALER should not use another medicine containing a LABA for any reason. **Paradoxical Bronchospasm:** As with other inhaled medicines, UTIBRON NEOHALER can produce paradoxical bronchospasm that may be life-threatening. If paradoxical bronchospasm occurs following dosing with UTIBRON NEOHALER, it should be treated immediately with an inhaled, short-acting bronchodilator; UTIBRON NEOHALER should be discontinued immediately and alternative therapy instituted. **Immediate Hypersensitivity Reactions:** Immediate hypersensitivity reactions have been reported after administration of indacaterol or glycopyrrolate, the components of UTIBRON NEOHALER. If signs suggesting allergic reactions occur, in particular, angioedema (including difficulties in breathing or swallowing, swelling of tongue, lips and face), urticaria, or skin rash, UTIBRON NEOHALER should be discontinued immediately and alternative therapy instituted. UTIBRON NEOHALER should be used with caution in patients with severe hypersensitivity to milk proteins. **Cardiovascular Effects:** Indacaterol, like other beta$_2$-agonists, can produce a clinically significant cardiovascular effect in some patients as measured by increases in pulse rate, systolic or diastolic blood pressure, or symptoms. If such effects occur, UTIBRON NEOHALER may need to be discontinued. In addition, beta-agonists have been reported to produce ECG changes, such as flattening of the T-wave, prolongation of the QTc interval, and ST segment depression, although the clinical significance of these findings is unknown. Therefore, UTIBRON NEOHALER should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension. **Coexisting Conditions:** UTIBRON NEOHALER, like all medicines containing sympathomimetic amines, should be used with caution in patients with convulsive disorders or thyrotoxicosis, and in patients who are unusually responsive to sympathomimetic amines. **Worsening of Narrow-Angle Glaucoma:** UTIBRON NEOHALER should be used with caution in patients with narrow-angle glaucoma. Prescribers and patients should be alert for signs and symptoms of acute narrow-angle glaucoma (e.g., eye pain or discomfort, blurred vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal edema). Instruct patients to consult a physician immediately should any of these signs or symptoms develop. **Worsening of Urinary Retention:** UTIBRON NEOHALER should be used with caution in patients with urinary retention. Prescribers and patients should be alert for signs and symptoms of urinary retention (e.g., difficulty passing urine, painful urination), especially in patients with prostatic hyperplasia or bladder-neck obstruction. Instruct patients to consult a physician immediately should any of these signs or symptoms develop. **Hypokalemia and Hyperglycemia:** Beta$_2$-adrenergic agonists may produce significant hypokalemia in some patients, which has the potential to produce adverse cardiovascular effects. The decrease in serum potassium is usually transient, not requiring supplementation. Inhalation of high doses of beta$_2$-adrenergic agonists may produce increases in plasma glucose. In patients with severe COPD, hypokalemia may be potentiated by hypoxia and concomitant treatment, which may increase the susceptibility for cardiac arrhythmias. In 2 clinical trials of 12-weeks duration evaluating UTIBRON NEOHALER in subjects with COPD, there was no evidence of a treatment effect on serum glucose or potassium.

ADVERSE REACTIONS: Clinical Trials Experience: Because clinical trials are conducted under widely varying conditions, the adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in clinical trials of another drug and may not reflect the rates observed in clinical practice. The UTIBRON NEOHALER safety database included 2654 subjects with COPD in two 12-week lung function trials and one 52-week long-term safety study. A total of 712 subjects received treatment with UTIBRON NEOHALER 27.5 mcg/15.6 mcg twice daily (BID). The safety data described below are based on the two 12-week trials and the one 52-week trial. **12-Week Trials:** The incidence of adverse reactions associated with UTIBRON NEOHALER in Table 1 is based on two 12-week, placebo-controlled trials (Trials 1 and 2; N=1,001 and N=1,042 respectively). Of the 2040 subjects, 63% were male and 91% were Caucasian. They had a mean age of 63 years and an average smoking history of 47 pack-years, with 52% identified as current smokers. At screening, the mean post-bronchodilator percent predicted forced expiratory volume in 1 second (FEV_1) was 55% (range: 29% to 79%), the mean post-bronchodilator FEV$_1$/forced vital capacity (FVC) ratio was 50% (range: 19% to 71%), and the mean percent reversibility was 23% (range: 0% to 144%). The proportion of patients who discontinued treatment due to adverse reactions was 2.95% for the UTIBRON NEOHALER treated patients and 4.13% for placebo-treated patients.

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

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

Other adverse reactions occurring more frequently with UTIBRON NEOHALER than with placebo, but with an incidence of less than 1% include dyspepsia, gastroenteritis, chest pain, fatigue, peripheral edema, rash/pruritus, insomnia, dizziness, bladder obstruction/urinary retention, atrial fibrillation, palpitations, tachycardia. **52-Week Trial:** In a long-term safety trial, 614 subjects were treated for up to 52 weeks with indacaterol/glycopyrrolate 27.5 mcg/15.6 mcg twice-daily, indacaterol/glycopyrrolate 27.5/31.2 mcg twice-daily or indacaterol 75 mcg once-daily. The demographic and baseline characteristics of the long-term safety trial were similar to those of the placebo-controlled efficacy trials described above. The adverse reactions reported in the long-term safety trial were consistent with those observed in the placebo-controlled trials of 12 weeks. Additional adverse reactions that occurred with a frequency greater than or equal to 2% in the group receiving indacaterol/glycopyrrolate 27.5 mcg/15.6 mcg twice-daily that exceeded the frequency of indacaterol 75 mcg once-daily in this trial were upper and lower

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

DRUG INTERACTIONS: Adrenergic Drugs: If additional adrenergic drugs are to be administered by any route, they should be used with caution because the sympathetic effects of indacaterol, a component of UTIBRON NEOHALER, may be potentiated. **Xanthine Derivatives, Steroids, or Diuretics:** Concomitant treatment with xanthine derivatives, steroids, or diuretics may potentiate any hypokalemic effect of $beta_2$-adrenergic agonists such as indacaterol, a component of UTIBRON NEOHALER. **Non-Potassium-Sparing Diuretics:** The electrocardiographic (ECG) changes and/or hypokalemia that may result from the administration of non-potassium-sparing diuretics (such as loop or thiazide diuretics) can be acutely worsened by beta-agonists, such as indacaterol, a component of UTIBRON NEOHALER, especially when the recommended dose of the beta-agonist is exceeded. Although the clinical relevance of these effects is not known, caution is advised in the coadministration of UTIBRON NEOHALER with non-potassium-sparing diuretics. **Monoamine Oxidase Inhibitors, Tricyclic Antidepressants, QTc-Prolonging Drugs:** Indacaterol, one of the components of UTIBRON NEOHALER, as with other $beta_2$-agonists, should be administered with extreme caution to patients being treated with monoamine oxidase inhibitors, tricyclic antidepressants, or other drugs known to prolong the QTc interval because the action of adrenergic agonists on the cardiovascular system may be potentiated by these agents. Drugs that are known to prolong the QTc interval may have an increased risk of ventricular arrhythmias. **Beta-Blockers:** Beta-adrenergic receptor antagonists (beta-blockers) and UTIBRON NEOHALER may interfere with the effect of each other when administered concurrently. Beta-blockers not only block the therapeutic effects of beta-agonists, but may produce severe bronchospasm in COPD patients. Therefore, patients with COPD should not normally be treated with beta-blockers. However, under certain circumstances, e.g., as prophylaxis after myocardial infarction, there may be no acceptable alternatives to the use of beta-blockers in patients with COPD. In this setting, cardioselective beta-blockers could be considered, although they should be administered with caution. **Anticholinergics:** There is potential for an additive interaction with concomitantly used anticholinergic medicines. Therefore, avoid coadministration of UTIBRON NEOHALER with other anticholinergic-containing drugs as this may lead to an increase in anticholinergic adverse effects. **Inhibitors of Cytochrome P450 3A4 and P-gp Efflux Transporter:** Drug interaction studies with indacaterol, a component of UTIBRON NEOHALER, were carried out using potent and specific inhibitors of CYP3A4 and P-gp (i.e., ketoconazole, erythromycin, verapamil, and ritonavir). The data suggest that systemic clearance of indacaterol is influenced by modulation of both P-gp and CYP3A4 activities and that the 2-fold area under the curve (AUC) increase caused by the strong dual inhibitor ketoconazole reflects the impact of maximal combined inhibition. Indacaterol was evaluated in clinical trials for up to 1 year at doses up to 600 mcg. Inhibition of the key contributors of indacaterol clearance, CYP3A4 and P-gp, has no impact on safety of therapeutic doses of indacaterol. Therefore, no dose adjustment is warranted at the recommended 27.5/15.6 mcg twice-daily dose for UTIBRON NEOHALER when administered concomitantly with inhibitors of CYP3A4 and P-gp.

USE IN SPECIFIC POPULATIONS: Pregnancy: Teratogenic Effects: Pregnancy Category C: There are no adequate and well-controlled studies with UTIBRON NEOHALER or its individual components, indacaterol and glycopyrrolate, in pregnant women. Animal reproduction studies were conducted with individual components, indacaterol and glycopyrrolate. Because animal reproduction studies are not always predictive of human response, UTIBRON NEOHALER should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Women should be advised to contact their physician if they become pregnant while taking UTIBRON NEOHALER. ***Indacaterol:*** Indacaterol was not teratogenic in Wistar rats and New Zealand rabbits at approximately 340 and 770 times, respectively, the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 1 mg/kg/day in rats and rabbits). ***Glycopyrrolate:*** Glycopyrrolate was not teratogenic in Wistar rats or New Zealand White rabbits at approximately 1400 and 530 times, respectively, the MRHD in adults (on an AUC basis at maternal inhaled doses up to 3.83 mg/kg/day in rats and up to 4.4 mg/kg/day in rabbits). **Non-teratogenic Effects: Indacaterol:** There were no effects on perinatal and postnatal developments in rats at approximately 110 times the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 0.3 mg/kg/day). ***Glycopyrrolate:*** There were no effects on perinatal and postnatal developments in rats at approximately 1100 times the MRHD in adults (on an AUC basis at maternal subcutaneous doses up to 1.88 mg/kg/day). **Labor and Delivery:** There are no adequate and well-controlled human trials that have investigated the effects of UTIBRON NEOHALER during labor and delivery. Because beta-agonists may potentially interfere with uterine contractility, UTIBRON NEOHALER should be used during labor only if the potential benefit justifies the potential risk. In human parturients undergoing Caesarean section, 86 minutes after a single intramuscular injection of 0.006 mg/kg glycopyrrolate, umbilical plasma concentrations were low. **Nursing Mothers:** *UTIBRON NEOHALER:* It is not known whether UTIBRON NEOHALER is excreted in human breast milk. Because many drugs are excreted in human milk, caution should be exercised when UTIBRON NEOHALER is administered to a nursing woman. Since there are no data from well-controlled human studies on the use of UTIBRON NEOHALER by nursing mothers, based on the data for the individual components, a decision should be made whether to discontinue nursing or to discontinue UTIBRON NEOHALER, taking into account the importance of UTIBRON NEOHALER to the mother. ***Indacaterol:*** It is not known whether indacaterol is excreted in human breast milk. Indacaterol (including its metabolites) have been detected in the milk of lactating rats. ***Glycopyrrolate:*** It is not known whether glycopyrrolate is excreted in human breast milk. Glycopyrrolate (including its metabolites) have been detected in the milk of lactating rats and reached up to 10-fold higher concentrations in the milk than in the blood of the dam. **Pediatric Use:** UTIBRON NEOHALER is not indicated for use in children. The safety and efficacy of UTIBRON NEOHALER in pediatric patients have not been established. **Geriatric Use:** Based on available data, no adjustment of UTIBRON NEOHALER dosage in geriatric patients is warranted. UTIBRON NEOHALER can be used at the recommended dose in elderly patients 75 years of age and older. Of the total number of subjects in clinical studies of UTIBRON NEOHALER, 45% were aged 65 and older, while 11% were aged 75 and older. No overall differences in safety or effectiveness were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. **Renal Impairment:** Based on the pharmacokinetic characteristics of its monotherapy components, UTIBRON NEOHALER can be used at the recommended dose in patients with mild to moderate renal impairment. In patients with severe renal impairment (estimated GFR less than 30 mL/min/1.73 m^2) or end-stage renal disease requiring dialysis, UTIBRON NEOHALER should be used if the expected benefit outweighs the potential risk since the systemic exposure to glycopyrrolate may be increased in this population. **Hepatic Impairment:** Based on the pharmacokinetic characteristics of its monotherapy components, UTIBRON NEOHALER can be used at the recommended dose in patients with mild to moderate hepatic impairment. Studies in subjects with severe hepatic impairment have not been performed.

OVERDOSAGE: In COPD patients, doses of up to 600/124.8 mcg UTIBRON NEOHALER were inhaled over 2 weeks and there were no relevant effects on heart rate, QTc interval, blood glucose or serum potassium. There was an increase in ventricular ectopies after 14 days of dosing with 300/124.8 mcg and 600/124.8 mcg UTIBRON NEOHALER, but low prevalence and small patient numbers (N=49 and N=51 for 600/124.8 mcg and 300/124.8 mcg UTIBRON NEOHALER, respectively) precluded accurate analysis. In a total of four patients, non-sustained ventricular tachycardia was recorded, with the longest episode recorded being 9 beats (4 seconds). UTIBRON NEOHALER contains both indacaterol and glycopyrrolate; therefore, the risks associated with overdosage for the individual components described below apply to UTIBRON NEOHALER. Treatment of overdosage consists of discontinuation of UTIBRON NEOHALER together with institution of appropriate symptomatic and/or supportive therapy. The judicious use of a cardioselective beta-receptor blocker may be considered, bearing in mind that such medicine can produce bronchospasm. Cardiac monitoring is recommended in cases of overdosage. ***Indacaterol:*** The potential signs and symptoms associated with overdosage of indacaterol are those of excessive beta-adrenergic stimulation and occurrence or exaggeration of any of the signs and symptoms, e.g., angina, hypertension or hypotension, tachycardia, with rates up to 200 bpm, arrhythmias, nervousness, headache, tremor, dry mouth, palpitation, muscle cramps, nausea, vomiting, drowsiness, dizziness, fatigue, malaise, hypokalemia, hyperglycemia, metabolic acidosis and insomnia. As with all inhaled sympathomimetic medications, cardiac arrest and even death may be associated with an overdose of indacaterol. In COPD patients, single doses of indacaterol 3000 mcg were associated with moderate increases in pulse rate, systolic blood pressure and QTc interval. ***Glycopyrrolate:*** An overdose of glycopyrrolate may lead to anticholinergic signs and symptoms such as nausea, vomiting, dizziness, lightheadedness, blurred vision, increased intraocular pressure (causing pain, vision disturbances or reddening of the eye), obstipation or difficulties in voiding. In COPD patients, repeated orally inhaled administration of glycopyrrolate at total doses of 124.8 mcg and 249.6 mcg once-daily for 28 days were well tolerated.

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

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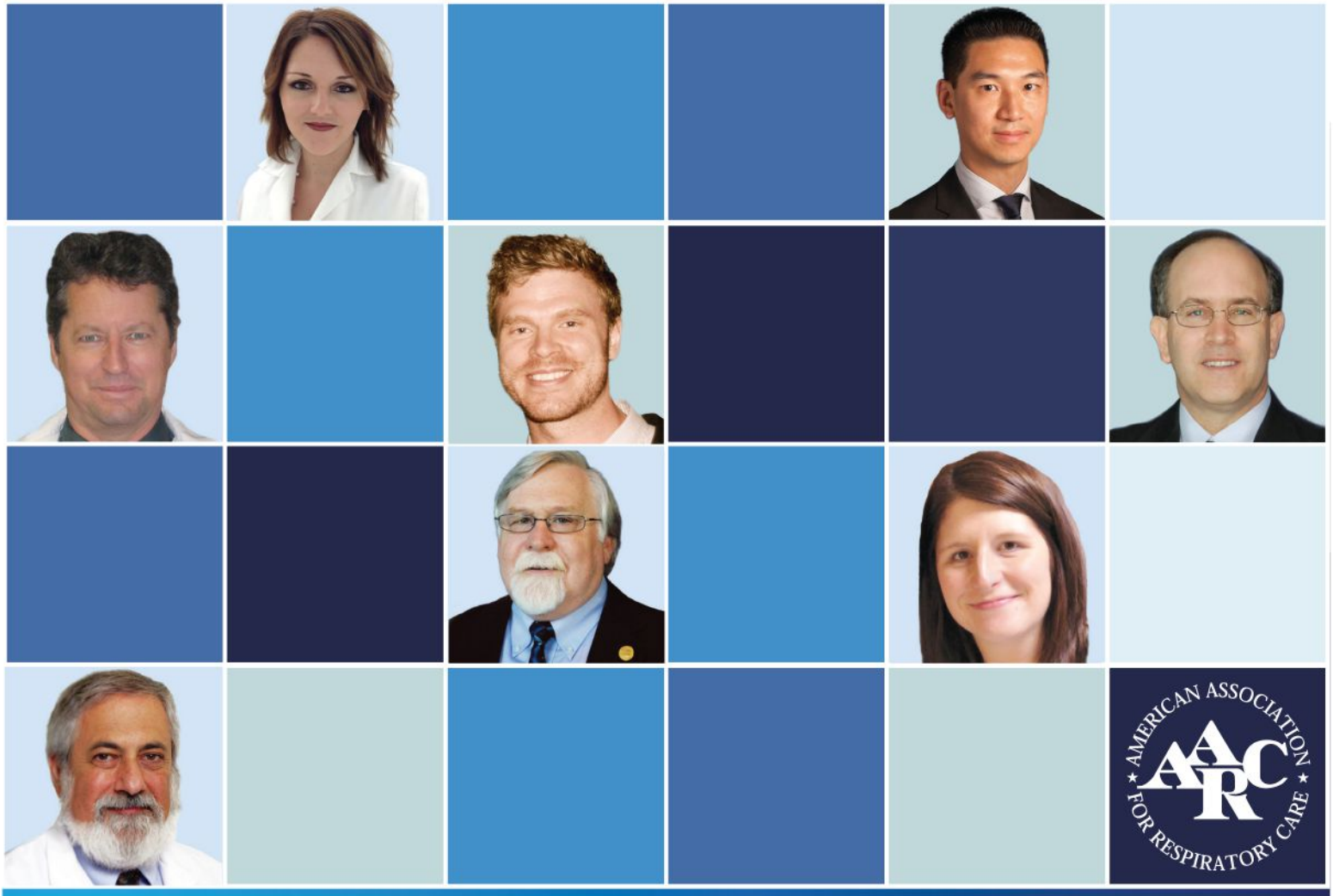

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Always Room for a Friend

AARC Times Photo of the Year illustrates the value of pulmonary rehabilitation

by Debbie Bunch

All the fun began when Ruth Ann hitched a ride with Barb.

The winning photo in this year's *AARC Times* Photo of the Year Contest speaks volumes about what it means to be a patient in a pulmonary rehabilitation program. Taken by Lynne Leach, RRT, RPFT, it shows two ladies — Ruth Ann and Barb — on their way into their program at McLaren Hospital in Flint, MI.

"Barb uses a motorized scooter to help her with the difficult walk into our center. One day when coming in, she noticed that Ruth Ann was having trouble with her shortness of breath," says Leach. "Barb offered her help with a ride and Ruth Ann accepted."

By the time Leach snapped the photo, the two friends were laughing so hard they were having a hard time staying on the scooter. "This picture represents all the good that comes with participation in pulmonary rehabilitation," says the AARC member. She titled the picture "Always Room for a Friend" when she submitted it to the contest, and the title certainly fits.

"There truly is always room for a friend," says Leach.

Comprehensive Program

Lynne Leach can trace her interest in respiratory care back to a high school shadowing experience, where she observed an RT administering a nebulizer to a child with asthma. "The interaction between the respiratory therapist and the child was heartfelt," she remembers. She saw a career for herself in the profession and graduated from the program at Ferris State University in 1983. While working as a staff therapist in a hospital in Port Huron, MI, she got the opportunity to start a pulmonary rehab program and fell in love with the specialty. In 1998, her family moved to Clarkston, MI, and she took the job at McLaren. She's never looked back.

"We currently see between 120 and 150 patients on a regular basis," says Leach. Patients receive individual education, group education, and group fitness, with the goal being to improve their functional capacity. They can also see a clinical psychologist, a registered dietician, and a pharmacist free of charge. It's all overseen by a full time RT manager — Valerie McLeod, RRT — plus two full-time RTs and one part-time RT. "Combined, our staff has nearly 100 years of experience working in respiratory therapy/pulmonary rehabilitation," notes Leach. "We believe readmissions will be reduced when patients come through our program." The program's outcomes from 2016 bear that out. Overall, patients had a 22% improvement on the six-minute walk distance, a 23% decrease in shortness of breath during activities of daily living, and an improvement in well being, as evidenced by a 40% improvement in Patient Health Questionnaire-9 scores. "Knowledge is power," says Leach, adding that "the more patients know about their disease and symptoms, especially early warning signs of infection, the more likely they are to get treatment early."

Making a real difference

Working in pulmonary rehabilitation has given Lynne Leach a sense of making a real difference in her patients' lives. "I enjoy working in pulmonary rehabilitation because I have met wonderful patients over the years," she says. "I have learned the importance of an individualized treatment plan for each patient, and how this greatly affects his or her outcomes." She loves being able to teach her patients that it's okay to be short of breath, but moderation is the key to their success in life.

"Through education, they learn these things," says the therapist, and her winning photo in this year's photo contest is testament to that fact. Clearly, Barb and Ruth Ann would agree!

Lynne Leach, left, visits with Ruth Ann in the McLaren gym. Ruth Ann has been an ambassador for the pulmonary rehab program for 19 years.

Thank You, AARC Members, for Many Years of Great Photos!

The AARC recently decided this would be our final Photo-of-the-Year Contest. Thank you for the many wonderful cover photos you have submitted for publication and for voting for your favorites over the past dozen years! We are content to end our annual contest on a high note with this parting shot of Ruth Ann and Barb — chosen by you — and a real winner in our book. ■

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American Airline Smoking Ban Has Its Roots in the AARC

Twenty-five years ago, airline passengers boarding American domestic flights of six hours or less were finally assured of a smoke-free environment, as the initial ban on smoking on flights of two hours or less passed by Congress in 1988 was extended to cover longer flights. What respiratory therapists today may not know, however, is that this smoking ban — along with all the other extensions leading up to a total ban on airline smoking initiated in 2000 — has its roots in the respiratory care profession.

The AARC initiated efforts to get the ban back in the late 1980s by enlisting the support of its state societies, who sent their members out to the nation's airports to survey the flying public about smoking on airplanes and their willingness to support a ban.

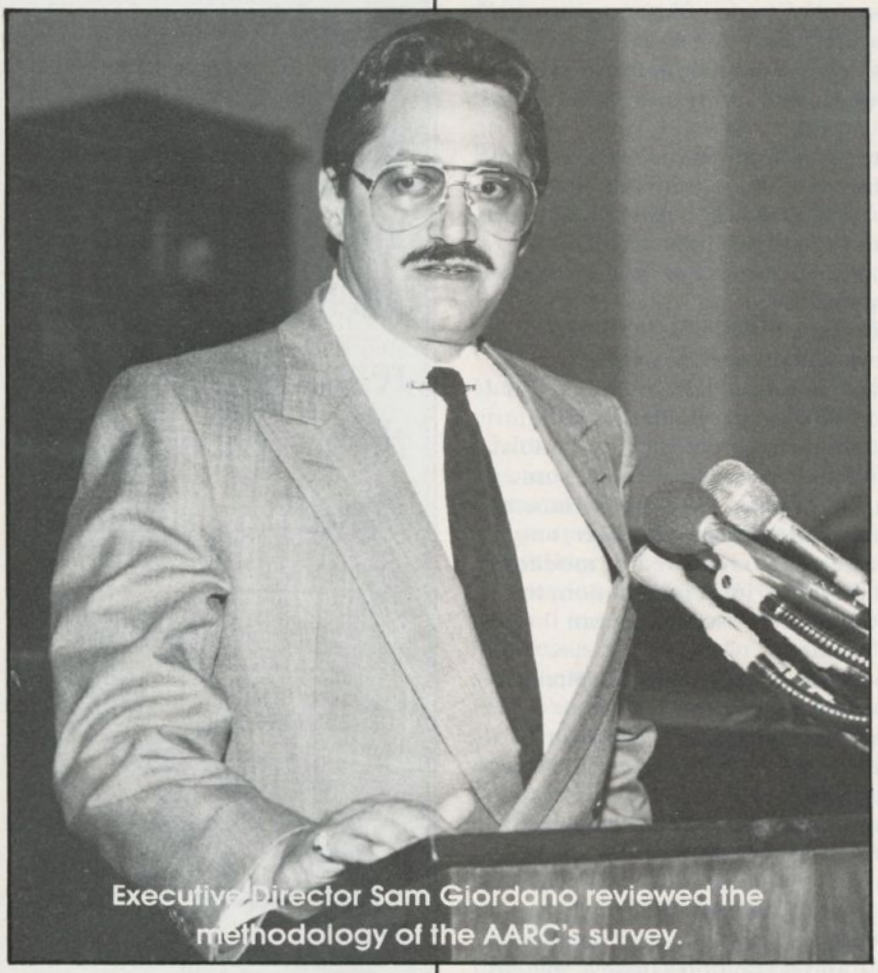
The AARC followed up with a second survey in 1989 showing that 92.8% of nonsmokers and 58.1% of smokers approved of a law to ban smoking on airplanes, helping to pave the way for the six-hour smoking ban that was implemented in 1990.

The following *AARC Times* article that was published many years ago has been picked up off the pages of history and used here in its entirety to give you a full perspective on the public support rallied by the AARC for the airplane smoking ban. The Association is especially proud of how members led the way in documenting the need and public support for the ban and then lobbying Congress for a law that would improve safety and comfort for everyone when flying.

We hope you enjoy this important piece of our history as part of our 70th AARC anniversary series of *AARC Times* articles. ■

Support Runs Strong F

The AARC has made a name for itself. Two years ago, the Association conducted a poll of airline passengers regarding their attitudes on smoking on airlines. As Congress prepared itself to deal with a continuation of the ban, they turned to the AARC.



Executive Director Sam Giordano reviewed the methodology of the AARC's survey.

Congressman Richard Durbin (D-IL) was the original author of legislation in the House of Representatives that led to a ban of smoking on flights of two hours or less. The ban, which went into effect April 1988, is scheduled to expire in April 1990, if not extended by legislative initiative. Earlier this year, Durbin had already begun to introduce new legislation that would make this ban a permanent one, extend it, or, better still, extend it to all airline flights. He turned to the AARC because no current data were available on public opinion of the ban. He knew we had worked hard to produce viable opinion information on our first survey that had ultimately helped pass the temporary ban. Durbin also knew that time was of the essence. Crucial hearings were taking place in Congress, and the more information he had supporting the ban, the better. He asked the AARC to conduct another nationwide survey — and to do it soon.

The AARC got right to work. Since we had already undertaken a similar survey effort in 1987, the AARC's House of Delegates was prepared to move quickly to do this survey a second time. Within a month, delegates had rallied forces back in their states and had received permission from local airports to perform the survey. During the last week of April, representatives of the AARC positioned themselves in airport terminals and asked passers-by about their attitudes on airline flight smoking bans.

The conclusions

When the information was tallied, we found that 27,677 airline passengers had been surveyed. This was an excellent response, just shy of the 33,000 passengers surveyed in 1987. The results showed that travelers overwhelmingly support the current ban of smoking on flights of two hours or less — 84% approved of the current ban, 12.2% did not approve, and 3.8% had no opinion. Interestingly, a majority of smokers approve of the current ban and also would favor making this two-hour ban permanent.

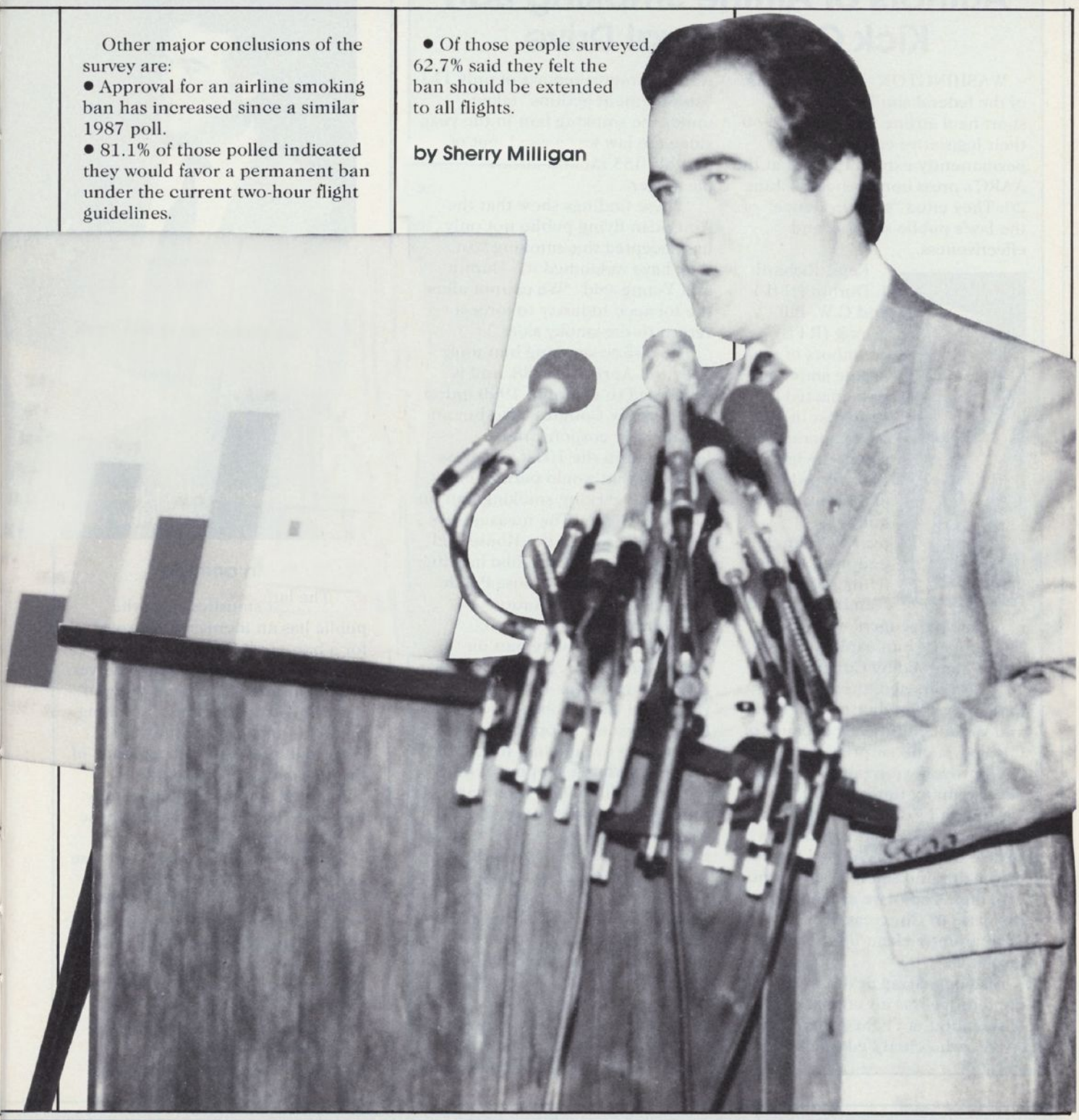
The 27,000+ travelers surveyed came from 66 airports in 33 states across the country. Specifically, 58.1% of smokers approve of the current ban, and 51.7% would favor a permanent ban.

or Smoke-Free Flights

Other major conclusions of the survey are:

- Approval for an airline smoking ban has increased since a similar 1987 poll.
- 81.1% of those polled indicated they would favor a permanent ban under the current two-hour flight guidelines.
- Of those people surveyed, 62.7% said they felt the ban should be extended to all flights.

by Sherry Milligan



Authors of Airline Smoking Ban Kick Off Renewal Drive

WASHINGTON — The authors of the federal smoking ban on short-haul airline flights kicked off their legislative campaign to permanently extend the ban at the AARC's press conference on June 20. They cited "solid evidence" of the law's public support and effectiveness.


Dick Durbin

Reps. Richard J. Durbin (D-IL) and C.W. Bill Young (R-FL), coauthors of the airline smoking ban enacted by Congress in 1987, said experience shows the law has worked extremely well and is overwhelmingly endorsed by the flying public — even by a majority of airline passengers who smoke. The smoking ban expires in 1990 unless renewed by Congress.

"Two years ago, the tobacco industry was predicting rebellion and violence in the air because of this law. It's no surprise they've been proven wrong again, as they have so many times before," Durbin and Young said in a joint statement. "Even most smokers realize this law has helped improve the health and safety of everyone who flies. Today we are kicking off the drive in Congress to permanently clean up the air in airplanes."

Also appearing at the press conference was an official of the Association of Flight Attendants (AFA), who cited Federal Aviation Administration reports of only 113 "enforcement actions" taken under the smoking ban in the year since the law was passed, out of roughly 455 million airline passengers.

"These findings show that the American flying public not only has accepted this smoking ban, they have welcomed it," Durbin and Young said. "We cannot allow the tobacco industry to force a return to the smoky skies."

The airline smoking ban took effect on April 23, 1988, and is scheduled to expire in 1990 unless extended by Congress. Durbin and Young have cosponsored legislation in the 101st Congress (HR106) that would permanently renew the existing smoking ban on two-hour flights. The measure has 145 cosponsors in the House and was the subject of a public hearing June 22 before the House Public Works and Transportation Subcommittee on Aviation.

The Durbin/Young ban on airline smoking represents the first time Congress has ever restricted the actual use of tobacco for public health reasons, as opposed to its advertising or labeling. It was enacted with the support of the nation's airline flight attendant unions and numerous health groups, despite strong opposition from the tobacco lobby.

A ban on airline smoking was strongly recommended for health reasons for the National Academy of Sciences in 1986, about the same time that a report by the U.S. Surgeon General documented the health threats posed to nonsmokers by "secondhand" or "passive" smoke in enclosed areas.


President-elect Jerome Sullivan after the conference for

A change in attitude

The latest statistics show the public has an increased approval for a ban of smoking on airlines. The 1987 survey, which polled over 33,000 airline passengers, showed that 64% favored a ban of smoking on all commercial airlines. This latest poll shows that acceptance of the ban and approval of the concept of smoke-free flights may now rate higher, with 84% of those surveyed approving.

Smokers made up 24.5% of those surveyed. In 1987, 29.8% of smokers indicated they favored a ban of smoking on all commercial airlines. In the latest survey, when asked, "Do you approve of the current ban of smoking on flights of two hours or less?" 58.1% of smokers indicated their approval.

As might be expected, nonsmokers approved of the ban

fields additional media inquiries
a TV station in Dallas.

in greater numbers. According to the survey (which represented 75% nonsmokers), 92.8% of nonsmokers approved of the ban, while 4.2% did not. Slightly fewer of them favor a permanent ban — 91.1% would favor a permanent ban, 5.5% would not, and 3.4% said they did not know.

The press conference

Conducting the survey was only phase one of the project. We also had to get this information into the hands of the people who needed it — and to demonstrate the public's overwhelming support for smoke-free flights. On June 20, just prior to hearings in the House Aviation Subcommittee on Cabin Air Quality, the AARC announced the results of its report in a press conference in Washington, DC. The press conference was held in

A Challenge: AARC Asks Tobacco Institute To Participate In Cooperative Efforts

As expected, the Tobacco Institute attended the AARC's press conference that released the results of its public opinion poll on smoking.

Representatives of the Tobacco Institute handed out their own press release, which questioned the results of the AARC's survey. Their press release said, "The Tobacco Institute today criticized a poll conducted by the AARC on airline smoking issues, calling it inconsistent with other data on the issue."

The release criticized the AARC's 1987 poll for incomplete information. This information was subsequently provided to them by the AARC in 1988; however, the Tobacco Institute did not reference that fact.

The release went on to say, "If the AARC wishes to express public opinion, they should do so in their own name, instead of under the guise of public opinion. This generation of self-serving, questionable data amounts to little more than the polling equivalent of a shady sales pitch — neither stand up to questioning or scrutiny..."

In response to the tobacco industry's comments, the AARC issued a challenge to them to work with us in conducting a public opinion poll. In an effort to take this issue to the public, the Association released the following news release three days after the press conference.

DALLAS, TX — The American Association for Respiratory Care (AARC) today issued a challenge to the Tobacco Institute to work with them in determining just how the public feels about the current ban of smoking on airline flights of two hours or less.

"We invite the Tobacco Institute to join us in designing a survey to gauge public opinion on smoking in public places, specifically on airlines," says Sam Giordano, executive director of the AARC.

The Tobacco Institute issued a criticism of the Association's recently released poll on the attitudes of airline passengers toward the ban of smoking on flights of two hours or less.

The AARC released its report on June 20. Of the 27,677 airline passengers surveyed, 84% approve of the current ban, and 81% would like to see that ban extended permanently. The present ban expires in April 1990 if not extended by congressional action. Additionally, 58% of smokers approve of the ban and 52% favor its permanent extension.

The Tobacco Institute criticized the AARC's survey as being "incomplete" and "suspect."

"Our goal is to put this issue to rest. We want to get at the truth, be objective, and minimize the confusion of and contradictory information given to the public," says Giordano. "We'll live with whatever results the survey shows. We challenge the Tobacco Industry to do the same."

the capital with Congressman Durbin and three other congressmen who are cosponsoring legislation with Durbin. Also, a member of the Association of Flight Attendants

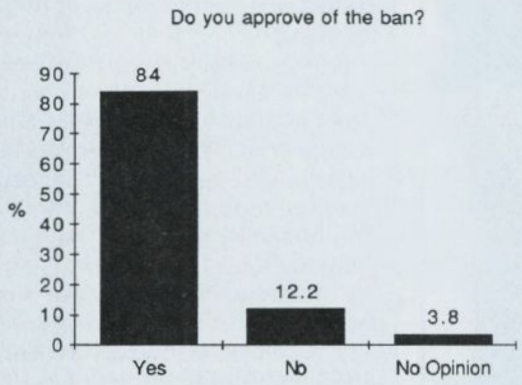
Susan Bianchi-Sand, president of the AFA, discussed enforcement of the current ban by flight attendants.

gave testimony on the flight attendants' support for smoke-free flights.

While the AARC was in Washington releasing results of the survey, delegates and chartered affiliate presidents were busy in their local communities drumming up media support and attention to the survey results. As a result of these two efforts, the AARC and its members received much attention in the media the week of June 20, as the issue of smoking on airlines becomes a hot potato in Washington once more.

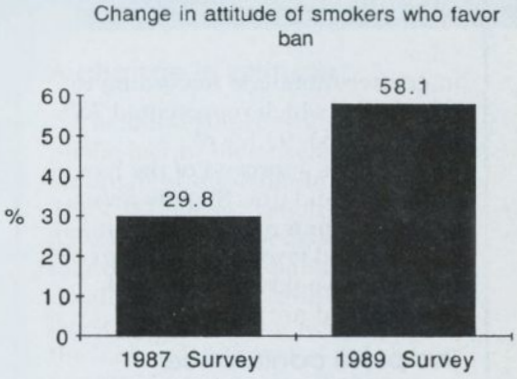
"USA Today" aired a short segment on the survey on its evening TV magazine show and the next day referenced the release of information on the front page of their morning edition. Other journalists and health reporters in Washington came to the press conference and conducted interviews with AARC

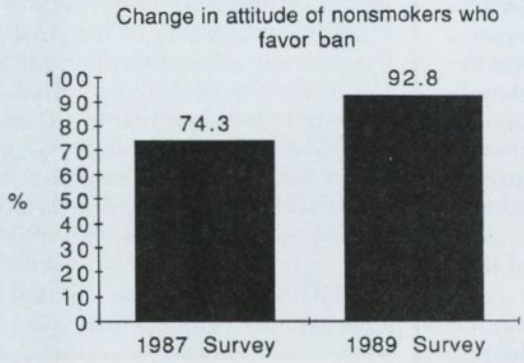
Public Attitudes Support Smoke-Free Flights



• Of the 27,677 people polled, 84% approve of the current ban, 12.2% do not approve, and 3.8% had no opinion.

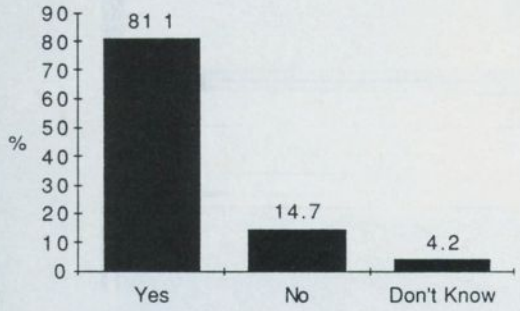
The 1989 AARC Public Opinion Poll on Airline Smoking was conducted at airports all across the country during the last week of April. A total of 27,677 people were polled at 66 airports in 33 states. Volunteers of the American Association for Respiratory Care posed five questions to passers-by in airline terminals to ascertain how airline passengers felt about the ban of smoking on flights of two hours or less. Specifically, major points of the study show that:





• Approval for an airline smoking ban has increased since a similar 1987 poll.

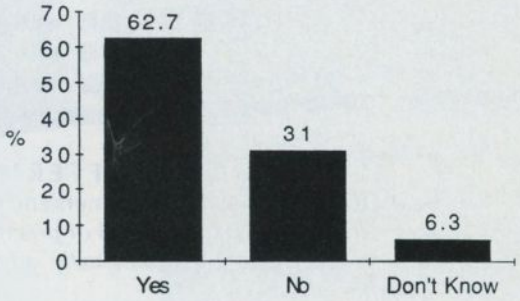
Favor making two-year ban permanent



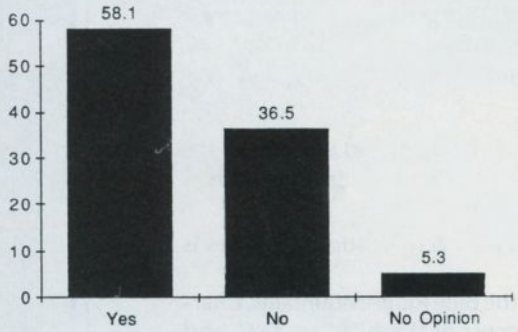
• 81 1% of those polled indicated they would favor a permanent ban under the current two-hour flight guidelines.

Should ban be extended to all flights?

• Of those people surveyed, 62.7% said they felt the ban should be extended to all flights.

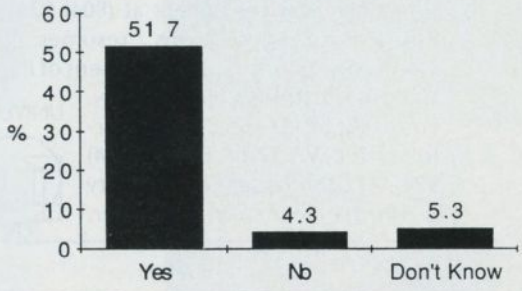


Smokers who approve of the ban



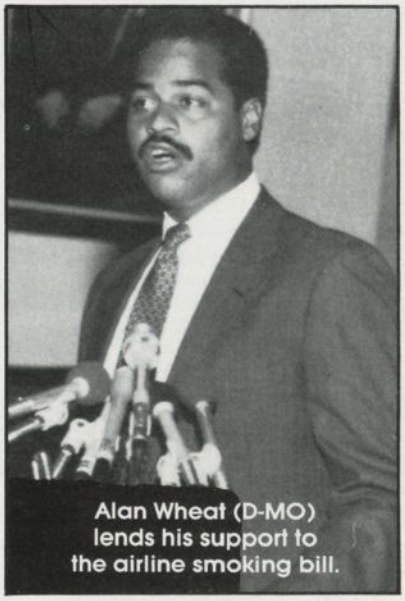
• Of respondents who indicated they smoke cigarettes, 58.1% approve of the current ban, and 51 7% would favor a permanent ban.

Smokers who favor extension of current ban



representatives and congressmen supporting airline smoking bans.

Presenting for the AARC was President-elect Jerome Sullivan, who gave the results of the survey. Executive Director Sam Giordano



Alan Wheat (D-MO) lends his support to the airline smoking bill.

reviewed the methodology and then introduced Congressmen Dick Durbin, Bill Young (R-FL), Alan Wheat (D-MO), and Bob Whittaker (R-KS). Dr Morris Brown, chairman of the AARC's Board of Medical Advisors, and President Paul Mathews were also on hand at the press conference to serve as resources. Immediately following the press conference, the AARC reps stationed themselves by the phones to wait for media calls.

"We feel the effort was very successful," says Jerry Sullivan. "Our intent was to focus attention on the AARC's efforts in this area, and we are happy with the amount of coverage we got in the media. Just as important, the AARC's Washington profile has been elevated once more. We are seen as *the* source of information on this subject. We can't ask for any better public recognition than that." ●

AARC Members Who Conducted the Airline Smoking Survey Shared Their Experiences

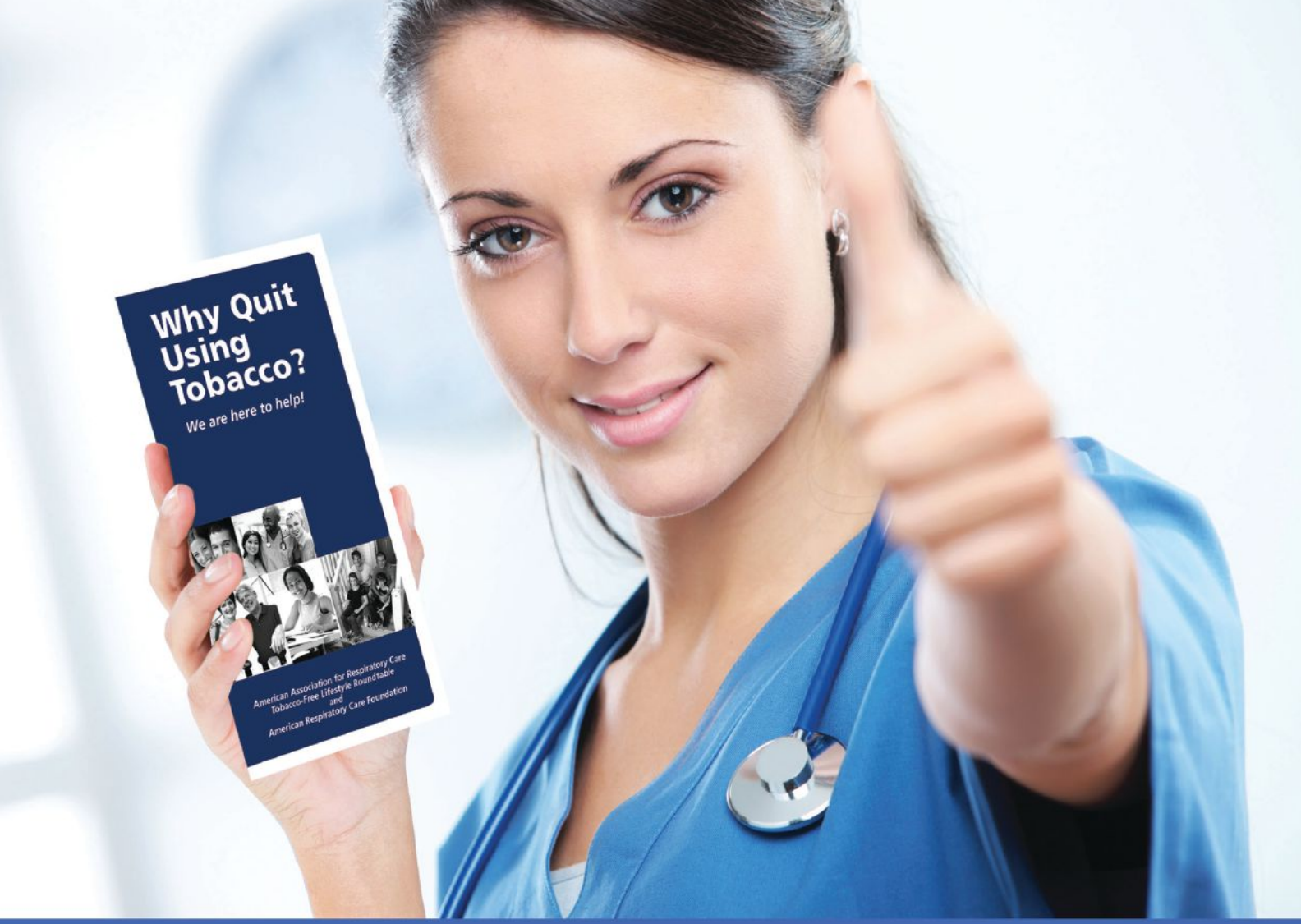
As noted earlier in this article, AARC state society members from across the country surveyed people passing through airports to get their thoughts on whether it would be good to ban smoking on airlines. Here are some quotes from members about their experiences, which were published in the January 1990 edition of *AARC Times*. ■

"In some cases, we would survey one person and then go on to someone else, and the first person would come back to us with another comment in support of the ban, saying 'Write this down.' We (the airport in Salt Lake City) were billed as an international airport, and the majority of those we interviewed were going through the airport on their way to someplace else. In fact, we ran into several people who had already been surveyed somewhere else on this earlier in the week."
— *Georgine Bills, a respiratory therapist from Ogden, UT*

"We had a National Guard unit that was on its way to Nevada for two weeks of summer training in the desert. They were more than happy to have the female members of our group ask them questions. When the surveying was over, they even asked the RTs to pose for group pictures and then followed them around as they surveyed other participants."
— *Bob Thalken, an RT from Newark, NJ.*

"If someone was in too big a hurry to stop, the RT would ask if it was OK to walk along with them and conduct the survey. Our group, which included students from south Plains College, collected over 2,000 signatures."
— *Marcia Black, an RT from Lubbock, TX*

"The fact that the air in planes is constantly being recirculated was the big issue."
— *Karen Milikowski, an RT from Pennsylvania*



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AARC History Lesson Found Here

Ohio RTs gather with AARC leaders to celebrate the evolution of their profession

By Debbie Bunch

A generous donation of medical images to the Dittrick Museum of Medical History made by AARC member Steve DeGenaro gave respiratory care the chance to shine in a special exhibit last April.

The AARC celebrated its 70th anniversary on April 15, 2017, and the Dittrick Museum of Medical History honored the occasion with a special exhibit that ran throughout the month. The event culminated on April 22, with an AARC 70th Anniversary Conference featuring presentations on the history of the profession.

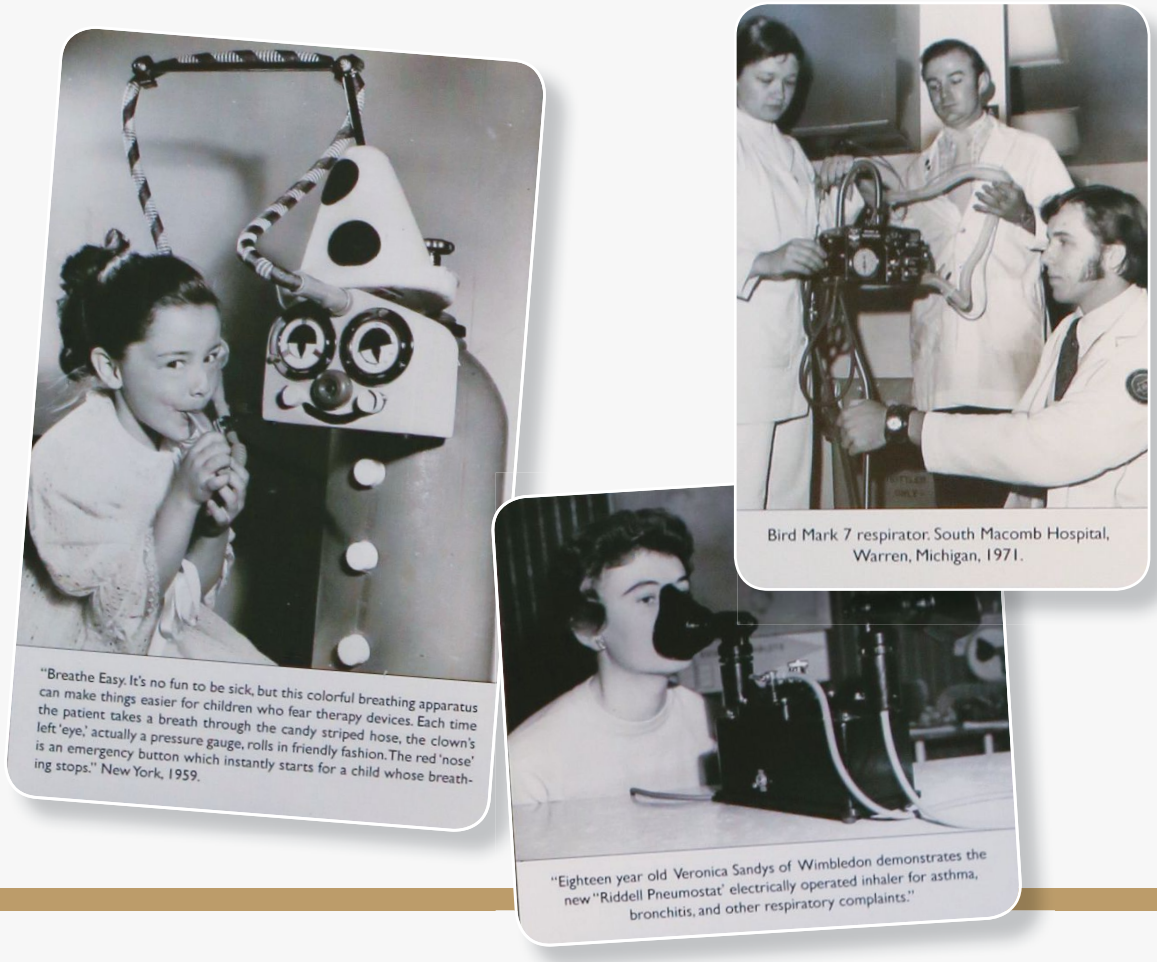
A passion for medical history

Housed in the Dittrick Medical History Center on the campus of Case Western Reserve University in Cleveland, OH, the Dittrick Museum is home to medical memorabilia chronicling the evolution of everything from anatomy, endoscopy, microscopy, and contraception to surgery, obstetrics, gynecology, and diagnostic instrumentation.

Now, thanks to AARC member Steve DeGenaro, RRT, images relating to the use of the iron lung for polio patients are included in the library. DeGenaro donated his extensive collection to the museum in honor of the Association's 70th anniversary, and those photos, along with other items and images related to the treatment of breathing difficulties from the museum's permanent collection, were brought together for the 70th Anniversary exhibit.

"Steve DeGenaro is an RRT and member of the Ohio Society for Respiratory Care (OSRC) with a passion for the history of medicine, our profession, and medical photography," explains fellow Ohioan Terry Volsko, MBA, MHHS, RRT, CMT-E, FAARC. "He is an avid collector of medical photography and medical equipment, traveling the world to purchase pieces for his collection." A big supporter of the Dittrick Museum, DeGenaro proposed the exhibit and the two-day event to celebrate the rich history of the respiratory care profession and medical innovation, much of which has deep roots in the Cleveland area. All proceeds from the conference registration benefited the American Respiratory Care Foundation's Virtual Museum fund.

"Because their library is an amazing trove of information, and because they are the medical museum closest to where I live, I found the Dittrick early in my collecting career," says DeGenaro. "Jim Edmonson, the director, has always been a wealth of information and has grown into a good friend as well. I've helped curate shows there in the past and lent, donated, and sold photographs to the institution over the years."



"Breathe Easy. It's no fun to be sick, but this colorful breathing apparatus can make things easier for children who fear therapy devices. Each time the patient takes a breath through the candy striped hose, the clown's left 'eye,' actually a pressure gauge, rolls in friendly fashion. The red 'nose' is an emergency button which instantly starts for a child whose breathing stops." New York, 1959.

Bird Mark 7 respirator. South Macomb Hospital, Warren, Michigan, 1971.

"Eighteen year old Veronica Sandys of Wimbledon demonstrates the new "Riddell Pneumostat' electrically operated inhaler for asthma, bronchitis, and other respiratory complaints."

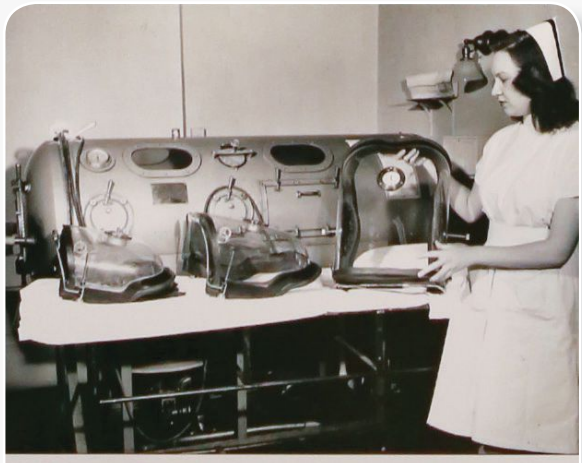
VIP reception

A host of RTs and other health care professionals from the Cleveland area attended the 70th Anniversary Conference on April 22. After current and former leaders in the OSRC gathered the night before for a special VIP reception, everyone got ready to learn more about where their profession had been and where it is going.

"It was an honor to bring this event to Ohio," says Volsko, who assisted DeGenaro with the planning. "The event was very well received, as evidenced by the number of industry sponsors – who at the ninth hour, stepped up to support the event and the ARCF. Our sponsors challenged their processes and really stepped up to the plate to support the ACRF and celebrate our history — which is remarkable!"

The gathering included talks on respiratory therapy protocols, the history of the AARC, mechanical ventilation, postdischarge respiratory care, and international respiratory care. Speakers ranged from DeGenaro and AARC Executive Director Thomas Kallstrom, MBA, RRT, FAARC, who gave the opening remarks, to James Stoller, MD, MS, FAARC, Robert Chatburn, MHHS, RRT-NPS, and Joe Lewarski, BS, RRT, FAARC. Former AARC Presidents Jerome Sullivan, PhD, RRT, FAARC, and Trudy Watson, BS, RRT, FAARC (currently AARC Historian), also took the podium.

Attendees earned 3.25 AARC continuing education credits for participating in the morning event. Immediately following the final presentation, everyone headed to the special exhibit to view the RT memorabilia on display.



"Old and new in 'Iron Lungs'. Lightweight chest respirators developed at the University of Michigan in Ann Arbor, Mich,, are shown against the background of an old-type Iron Lung. The new device is four hundred times lighter." 1948.

Cuirass style respirator, City Hospital, Cleveland. Left to Right: Nurse Martha Skarbotta, polio ward; Mrs Ida Brinkman, Willowick, respirator patient; Social Worker Margaret Hyns; Martha Goldstein, WRU; Ron Rosenbach, WRU; Dr. Robert Eiben, City Hospital. Cleveland, 1955.

"New Respirator Aids Boy. Ray Howell, nine-year-old polio victim, is shown at University of Michigan Hospital wearing a new type chest respirator developed by an Ann Arbor, Mich pediatrician and a Chicago engineer." 1948.

Well attended

Volsko says the event was well attended by Ohio RTs and even attracted some local political leaders from Cleveland and Youngstown. "It solidified the importance respiratory care plays in medicine in the Cleveland and supporting areas, as well as in our state," she says.

Ohio Senator Rob Portman officially recognized the conference and exhibit in his letter to the AARC. "I applaud the dedication of you and your members to promoting the importance of respiratory therapists and the Association," wrote Portman. "I commend the opportunity for people to learn from the exhibit and engage in such an educational experience."

The Cleveland City Council welcomed the AARC with a special proclamation, noting that the council "takes great pride in recognizing the American Association for Respiratory Care on the noteworthy occasion of its 70th Anniversary" and applauding "the entire respiratory care community of physicians, therapists, and all others involved in the field for maintaining the highest ethical and professional standards of pulmonary care." Cleveland City Council member Anthony Brancatelli presented the "Resolution of Congratulations" to Thomas Kallstrom.

Trip down memory lane

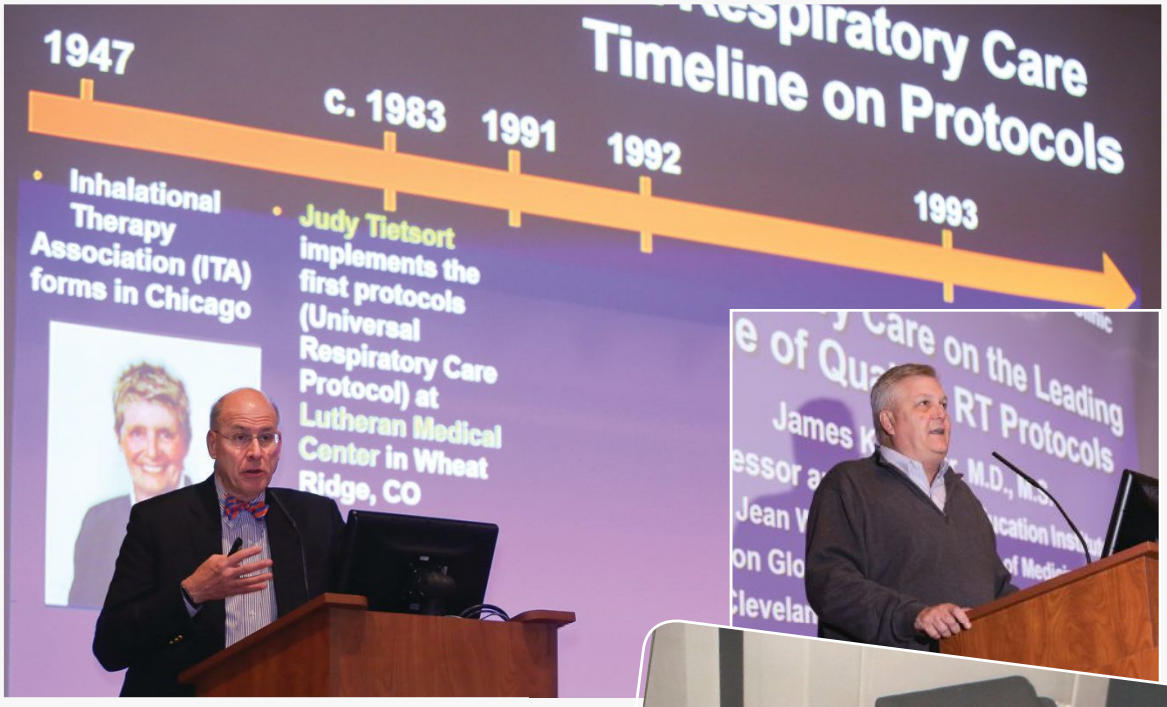
"It's always a pleasure for me to share an overview of the AARC's milestones with our members," says Trudy Watson, who spoke at the event as our AARC historian. "Many of the long-term members in attendance were in the profession while many of the AARC's milestones occurred, so it was a trip down memory lane for them."

The younger members of the audience weren't around when many of those milestones took place, but she believes they enjoyed the "trip" as well. "Hopefully, the presentations at the Dittrick helped them better understand the evolution of various aspects of the AARC and the profession," says Watson. ■

"Love Is The Winner: Calvin Leonard, 30, leans over to pose with his polio-stricken bride, Margaret Schreiber, 30, following their wedding here yesterday. Margaret, paralyzed from the neck down for eight years, wears a portable respirator. They met in hospital where Margaret was a patient and Calvin a volunteer worker." New York, 1959.

"Shawn Driscoll - 12 yr old with breathing machine (Children's Asthma Foundation)." Bennett respirator, 1974.

The Iron Lung made it to the movies several times, including this scene from ***Let Them Live*** (Universal, 1937). In that film Dr. Paul Martin (played by John Howard) heroically stems an outbreak of polio. Part of his arsenal in this struggle was the Drinker respirator, seen here.



"Architect's Assistant, Alonzo Welshman, an architectural artist who has been in an iron lung for thirteen months, uses a new device built by his father to help practice his drawing." Los Angeles, 1954.

"Stopping by to wish a Merry Christmas to 7-year-old Villy Stacy, of Geneva, O., iron lung patient at City Hospital. … the little boy was so overwhelmed he couldn't think of a thing he wanted for Christmas 'except maybe a sun visor to keep the overhead light out of my eyes'." Cleveland, 1949.

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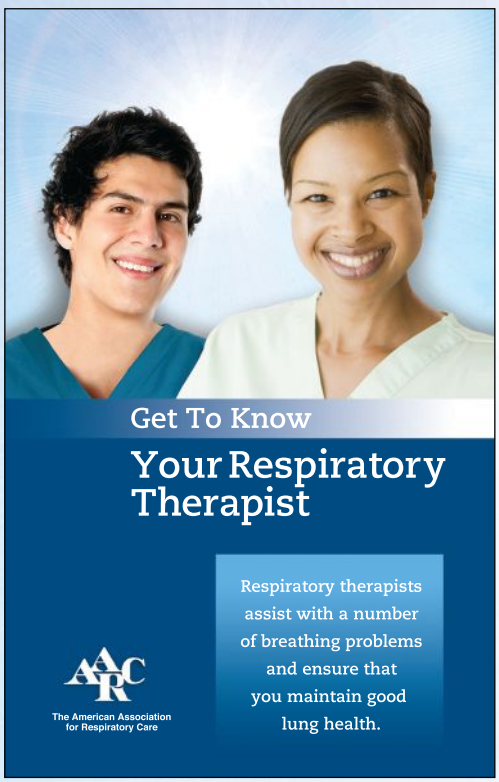
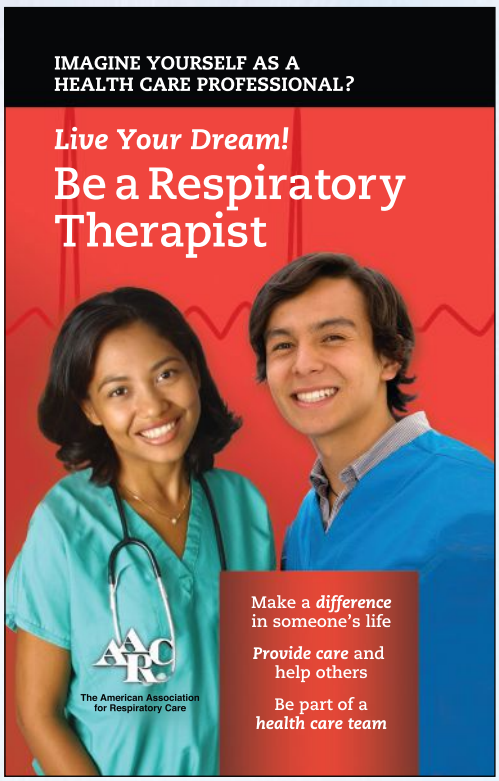
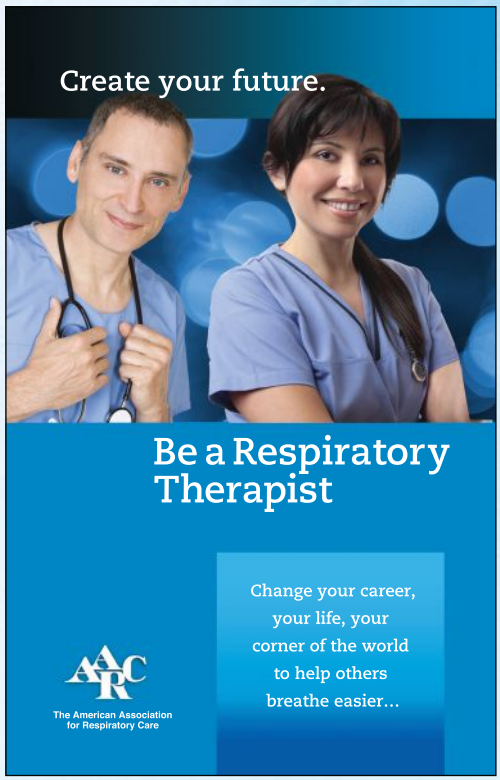
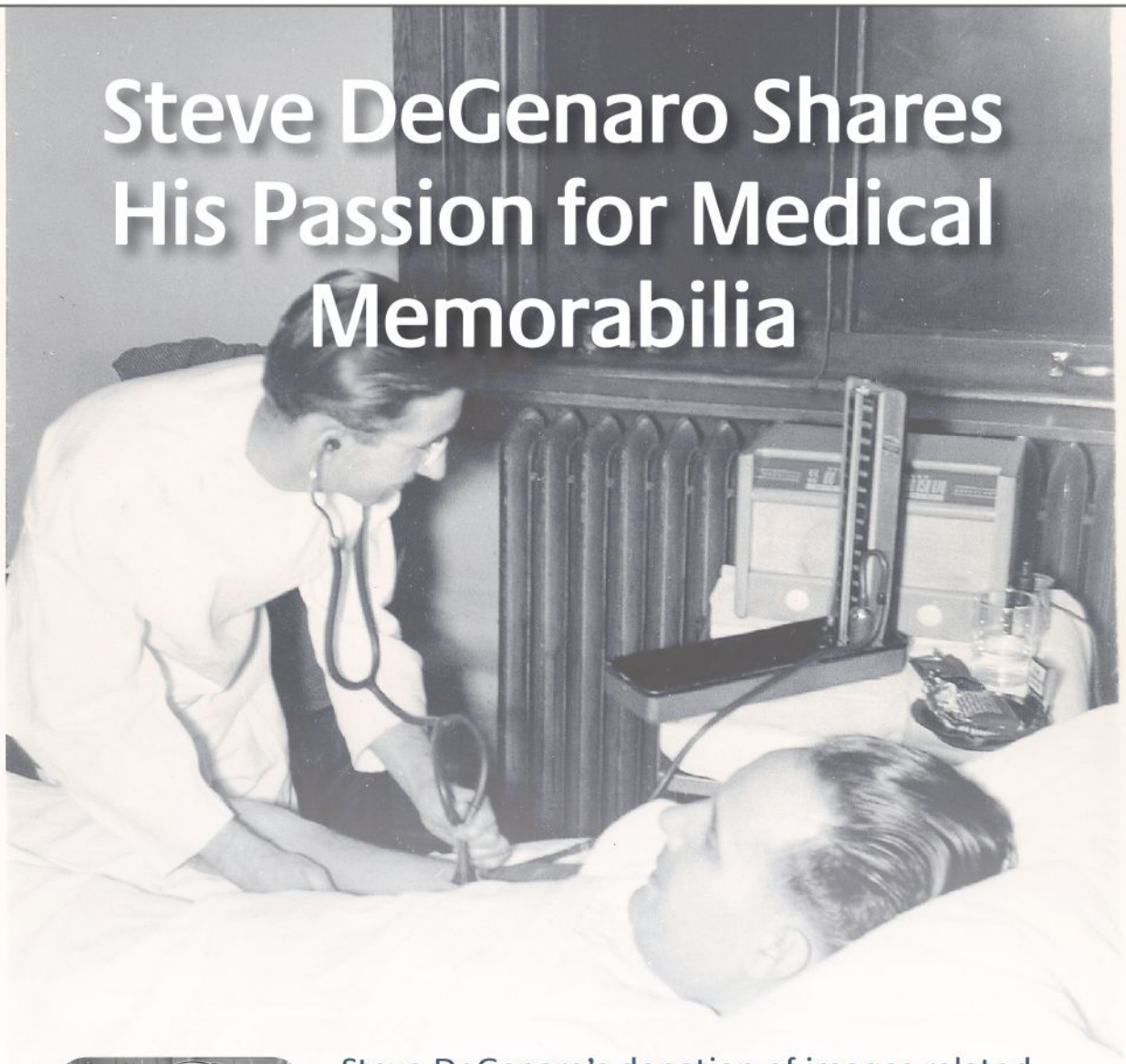






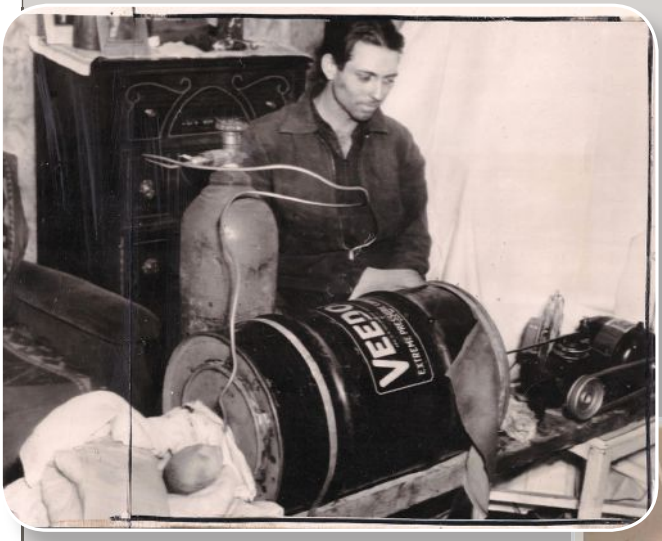
Steve DeGenaro Shares His Passion for Medical Memorabilia



Steve DeGenaro's donation of images related to the iron lung spurred the 70th Anniversary Conference that took place at the Dittrick Museum of Medical History last April. In this interview, the RRT explains how he got involved in collecting medical images and what the hobby means to him.

How did you get interested in collecting medical images, particularly those that relate to respiratory care?

I have always been interested in history and have collected vintage photography related to medical history for decades. The iron lung photography — and vintage respiratory therapy photography in general — is the bridge between my career and my hobby. I have medical photos covering a wide variety of topics, specialties, and subcategories, but the iron lung and respiratory therapy photos have a special place in my heart.



Of all my iron lung photos, this is my favorite. It shows a father who has built an iron lung out of an oil can. Plans for this device appeared in magazines, and countless handyman-types built their own. Supply couldn't keep up with demand when the iron lungs were introduced, and homemade models kept many patients alive — and undoubtedly failed to keep some alive as well. To me, this photo is very representative of how tenacious and industrious we can be when we need to; it also is quite representative of the respiratory therapist's "techie" nature. It makes me think of nights putting ventilator circuits together or building contraptions to blend oxygen or deliver aerosol therapy.

Because I spent most of my career in home care, this photo of a home medical equipment oxygen-delivery vehicle and team has always been special to me. Who Herb, Bob, Maxine, and Monty were is lost to the ages, but I've worked with countless people like them, taking care of patients at home.

About how many images have you collected over the years?

My collection of vintage medical photography numbered approximately 4,000 images at its peak. About 600 or 700 of those images were related to respiratory therapy, lung disease, or pulmonary medicine in some way. Approximately 250–300 of the images were specifically related to the iron lung.

Do you have any favorite images?

I get attached to many of them, but a few definitely stand out.

This photo shows Brother Roland Maher assessing a patient. It is very special because of how it relates to our profession. It also highlights a "history detective story" worth telling.

It all started when I bought a photo album full of images of nurses and technicians providing care in a hospital setting. Some of the photos had vaguely respiratory care-related themes, such as administering oxygen and setting up oxygen tents. The album had no identification with it whatsoever.

However, seeing that the techs appeared to be dressed as part of some religious order reminded me of the early inhalation therapists who were brothers and sisters in Catholic religious orders. After owning the album for many years, I looked up hospitals in Chicago and found myself corresponding with someone in the library of the Alexian Brothers Health System.

Eventually, a kind and patient librarian in their archives was able to find someone who identified several of the people in the photos. Among the photos were pictures of some very early "inhalation therapists" at work, including Brother Silverius Case and Brother Roland Maher. Brother Roland was the president of the AARC from 1949 through 1953, when it was called first the Inhalation Therapy Association and then the American Association of Inhalation Therapists. He and several other Alexian Brothers were early respiratory therapists whose involvement in the profession and the professional organization helped develop our profession!

I found this photo album at a photo show. I can only imagine whose hands it passed through between the 1940s and 2001, the year I acquired it.

Why did you decide to donate your collection of iron lung images to the Dittrick Museum, and how does it feel to know that they contributed to the 70th anniversary celebrations of the AARC that took place there last April?

My collection had outgrown my office, family room, storage area, and closets many years ago, and my wife and I made the difficult decision several years ago to start donating large chunks of the collection. I've given major portions of the collection to several institutions around the country.

Early on, in the phase of my collecting where I started talking about downsizing and donating, I realized it was very important to keep the RT photographs together. Individually, there are some neat old pictures, but taken as a collection, they tell the story of our profession in a way that words alone would never do. They are a visual representation of a history many of us lived through. Preserving them as a collection keeps our story, our legacy, our history together.

What do you want people to take away from your respiratory therapy collection?

I was fortunate to find a profession in its relative infancy and work in it while it "grew up." That profession has given me so much more than a job. The life experiences and friendships I've had because of respiratory therapy have been and continue to be priceless. I hope the collection encourages other RTs and other potential and future RTs to preserve the history of the profession going forward, too. ■

— 2017 —

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.

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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.

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Industry Watch

Spyryx Biosciences reports good results for CF drug

A new study in the *American Journal of Respiratory and Critical Care Medicine* suggests Spyryx Biosciences, Inc.'s lead therapeutic, SPX-101, has the potential to restore mucus transport in cystic fibrosis patients. The paper investigated the in vitro and in vivo efficacy of SPX-101, a peptide mimetic of SPLUNC1's natural regulation of epithelial sodium channel (ENaC) activity. The authors concluded that by removing ENaC from the cell surface, SPX-101 promotes a durable inhibition of sodium absorption, resulting in increased mucus transport. The mechanism of action of SPX-101 is independent of the genetic mutations that cause CF, which makes it a potential therapy for all CF patients.

Pulmatrix receives patent for COPD drug

Pulmatrix, Inc., has received a key patent in the United States for its lead drug candidate, PUR0200, to treat COPD. PUR0200 is an inhaled drug made by combining Pulmatrix's technology platform with tiotropium bromide. "This patent ensures that the product is protected by intellectual property until 2033," said CEO Robert W. Clarke, PhD.

Home NIV lowers costs, study says

According to Royal Philips, a new study has found that the Philips Trilogy 100 with AVAPS-AE mode lowers both hospital and payer costs as well as hospitalization rates for patients with severe COPD when compared to noninvasive ventilation (NIV) or the use of less advanced NIV therapy after patient discharge. "The multifaceted and connected home NIV model described in this study can be easily adopted by other medical facilities and payers, and is expected to have a meaningful impact on both clinical outcomes and health care costs," said Dr. Teofilo Lee-Chiong, pulmonologist and chief medical liaison at Philips.

ResMed unveils world's smallest CPAP machine

ResMed has unveiled the world's smallest CPAP machine: AirMini™ combines ResMed's CPAP technology with its comfort and ease-of-use features into a pocket-sized device the company believes will be ideal for traveling. The AirMini is available with ResMed's proprietary AutoSet™ functionality as well, along with a built-in humidification system for patient comfort.

InspiRx begins preclinical program for PF drug

InspiRx, Inc., a respiratory research and development company based in Durham, NC, has announced it has begun its preclinical program for the treatment of pulmonary fibrosis with its licensed drug, Aerosolized Inteferon Gamma. The company also noted that Michael Amato, III, is now its director of marketing and sales. In addition, it added two new professionals to its scientific board of advisors: Stan Fiel, MD, director of pulmonary and critical care Atlantic Health, and Tonya Winders, president and chief executive officer of the Allergy Asthma Network.

New respiratory institute being planned

Jefferson Health in Philadelphia and National Jewish Health have entered into an agreement to create the Jane and Leonard Korman Respiratory Institute in Philadelphia. Enabled by the continuing support of the Jane and Leonard Korman Family Foundation, the initiative is expected to leverage the strengths of each organization and will define best practices for treatment and research related to pulmonary diseases, including COPD, asthma, interstitial lung disease, sarcoidosis, and infectious respiratory diseases.

Nobilis Therapeutics, Submersible Systems jointly develop device

Nobilis Therapeutics, Inc., a biotechnology company developing inhalation-based therapeutics to treat neurodegenerative disorders, has partnered with Submersible Systems, LLC, a manufacturer of rescue breathing devices. Together they will create a portable hand-held inhalation device for administration

of NBTX-001 — a noble gas-based drug candidate. The creation of the first truly portable device will allow patients to receive NBTX-001 safely and independently.

FDA approves MT Pharma America drug for ALS

According to MT Pharma America, Inc., the U.S. Food and Drug Administration has approved RADICAVA™ (edaravone) as an intravenous infusion treatment for amyotrophic lateral sclerosis (ALS). The drug is the first new treatment for ALS to be approved by the FDA in 20 years.

In a study, people given RADICAVA showed significantly less decline in physical function compared to placebo. "We believe RADICAVA offers new hope for people with ALS and exemplifies MT Pharma America's commitment to innovative therapies for patients in the United States battling life-threatening diseases," said President Atsushi Fujimoto.

Developing a rapid TB test for children

Arizona State University researcher Tony Hu has been awarded a five-year, $2.7 million grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development to develop a rapid tuberculosis diagnostic test for children. In addition to providing a faster diagnosis, Hu says he believes the testing strategy could allow physicians to personalize a child's treatment to avoid unnecessary exposure to toxic TB drugs once a child has cleared their TB infection.

Dalton Pharma Services embarks on safety trial for drug candidate

According to Arch Biopartners, Inc., Dalton Pharma Services has launched the good manufacturing practice (GMP) campaign for AB569, the company's inhalation drug candidate for treating antibiotic-resistant bacterial infections in the lungs. Dalton will be responsible for the GMP preparation and filling of AB569 into glass vials. The vials will then become part of the clinical kits required to support the phase I safety trial for AB569 to be conducted later this year.

Express Scripts launches drug discount site

Express Scripts has announced its launch of Inside Rx, a partially owned subsidiary that applies Express Scripts' purchasing power to expand affordable access to brand and generic medications for patients in need, including those who need asthma medications. Inside Rx has partnered with GoodRx to deliver savings for patients who experience high out-of-pocket costs for their prescription medications. Patients can download the GoodRx mobile app and instantly access discounts for popular brand-name drugs.

Chiesi USA announces staff promotions

Chiesi USA has promoted Doug Baratta to vice president of specialty and corporate accounts, and Donna White to vice president of contracts and compliance. Senior Vice President of Sales Jon Zwinski was quoted as saying, "Their unique contributions have positioned them to help us drive forward as we chart new territory in providing innovative solutions in cardiovascular therapeutics, neonatology, and specialty care for patients." •

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

Industry Update

Featuring information on products and equipment from manufacturers

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American Association for Respiratory Care

RC Currents

Hypoxia May Treat Mitochondrial Disorders

Could the brain damage inherent in mitochondrial defects be reversed by breathing air containing about half as much oxygen as normal? According to researchers from the Howard Hughes Medical Institute, the answer may be yes.

In a study conducted in mice, hypoxia led to the disappearance of brain lesions in mice genetically engineered to lack the *Ndufs4* gene, which encodes a protein essential for a part of the mitochondria called complex I. The mutated gene is present in people with a type of mitochondrial disease known as Leigh Syndrome. People with Leigh Syndrome suffer from progressive brain lesions, loss of motor skills, developmental delays, and failure to grow.

"I don't think anybody thought that these types of neurological diseases could be reversible," notes study author Vamsi Mootha. While testing in humans is a long way off, the researchers believe these findings suggest that hypoxia, or a drug that mimics a key aspect of it, might one day be able to rejuvenate flagging mitochondria, which is common in everyone as people age. The study appeared in the *Proceedings of the National Academy of Sciences*. ■

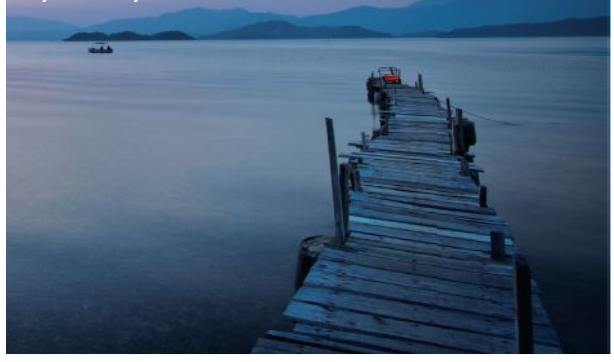
Point-of-Care Swab Test Can Speed Up Lung Disease Diagnosis and Treatment

A new study out of the United Kingdom suggests a point-of-care swab test can bring much needed treatment to patients with acute exacerbations of chronic lung disease sooner. The researchers used a portable device combined with a rapid molecular test to immediately process the swabs, with results delivered within an hour as opposed to several days with standard tests.

The system was tested in 720 patients with acute respiratory illness, including pneumonia and exacerbations of asthma and COPD. Half received the point-of-care test and half received standard care. Patients who got the point-of-care test received quicker treatment for their lung infection. Those who tested positive for influenza were appropriately isolated and given antiviral medication more often and sooner than those in the standard care group. The study was published in a recent edition of *Lancet Respiratory Medicine*. ■

Retirees: Share Your RC Career Experiences

Our "Reflections" column focuses on the professional career experiences of AARC members who have recently retired from our profession. As a retiree, we hope you'll look back at your respiratory care career and tell us what it meant to you and why. Start brainstorming some ideas and then submit your story, along with your active AARC member number, to Marsha Cathcart, *AARC Times* editor, at cathcart@aarc.org. We hope to feature your story soon! ■



Two Respiratory Care Schools Upgrade Their Degree Programs

Educational needs in the respiratory care profession continue to increase, and two schools recently announced new degree programs for producing respiratory care graduates who can rise to the next level. A goal nearly a decade in the making was realized at Molloy College on Long Island in New York earlier this month when CoARC approved the RC program's request to make the transition to the bachelor of science degree level.

"We decided to upgrade to a BS as far back as 2008," says Program Director Robert Tralongo, MBA, RRT-NPS, CPFT, AE-C. "The reasons included a need to increase the number of credits to give the students a more in-depth learning experience." Tralongo and his colleagues knew that moving to the BS level would allow them to increase not only the number of respiratory courses they offered but also the number of general education courses students need to achieve a well-rounded education. Student preferences were included as well. He notes that many of those enrolled in the program over the years had expressed the desire to obtain a four-year BS degree instead of the two-year AAS.

It was not easy. "The approval process required the design of the program, the interaction within the college governance structure, budgeting, and physical need for laboratory space," explains Tralongo. Once the college was on board, he and his fellow faculty members had to go to the New York State Board of Regents and get them to sign off on the change as well. The final step was the CoARC request for the substantive change approval, which was issued on May 16, 2017.

The first class of BSRT students could enroll as early as the fall of 2018, with the first graduates walking across the stage by May 2022. Tralongo believes the transition to the BS level will elevate the stature of the RC degree offered at Molloy. "Although I always felt we provided excellent instruction to our students, we were not considered a professional program by many academic and medical disciplines. The BS degree gives us a higher standing in the medical profession. My colleagues did a great job, and I am proud of their work," he says.

The respiratory therapy department at Weber State University (WSU) in Ogden, UT, has opened enrollment for a three-year ASRT-to-MSRT program for Registered Respiratory Therapists who possess an AS degree in respiratory therapy from a regionally accredited institution of higher learning. "It's a bridge that should help practitioners with a way to decrease the time to earn a BS, with residency requirements for the degree on their way to post-professional MSRT," says Paul Eberle, PhD, RRT, professor and chair of the department of respiratory care.

The program received approval from the Utah State Board of Regents in January 2016, but it had been in the works since 2014. "Once it was approved by the Regents, we proposed a way to promote higher learning and advance the profession to master's prepared consultants, educators, and resources to physicians," says Dr. Eberle.

The WSU president's council approved the program in March. Students enrolled in the program will first complete hours to fulfill the requirements for a bachelor's degree and then go on to complete the hours needed to achieve the master's degree. The coursework can be completed online as well, giving working therapists a convenient way to earn an MSRT. Dr. Eberle believes the program will graduate therapists who are capable of taking on the extended roles in the profession that are needed to meet the demands of our increasingly complex health care system. "The idea is to promote practitioners with a way to grow personally and professionally in the profession," says the AARC member. "It can enhance 'evaluate and treat' protocols for physicians who request respiratory therapist expertise and practice at a higher level of care." The program is now accepting applicants, and students will be able to choose from three tracks: education, health administration, and research.

The AARC has an extensive set of resources for education program directors seeking to elevate their AS degree RC program to the BS degree level, including a PowerPoint presentation on the value of transitioning to the BS level, a transition checklist for program directors, and a question/answer section with two program directors who have already made the change. For more information, go to https://www.aarc.org/education/educator-resources and select the link for "Transitioning from an Associate Degree Program to a Baccalaureate Degree Program." ■

Lighting Up Influenza

If clinicians could quickly and accurately diagnose influenza and customize treatments based on the results, more people might be spared the worst effects of the disease. New research out of the University of Notre Dame suggests that might be on the horizon. By engineering dye molecules to target a specific enzyme of the virus, the team was able to develop a test kit that emitted fluorescent light when illuminated with a hand-held lamp or blue laser pointer.

Samples that emitted red fluorescent light indicated influenza was present. Those that emitted blue fluorescent light indicated a negative result. The same process allowed scientists to determine which of two approved antiviral drugs would be a better treatment option as well.

"Viral cultures are the gold standard for diagnosis of influenza but take several days to develop. By targeting an enzyme inherent to the virus and identifying its presence in a sample, we can make a rapid determination of the influenza in a patient for an efficient and immediate diagnostic that would improve patient treatment and reduce overuse of antivirals," study author Bradley Smith was quoted as saying. The study appeared in a recent edition of the *Journal of the American Chemical Society*. ■

"Transitions" Column Honors Members' Passing

The AARC "Transitions" column is devoted to sharing news about the recent passing of AARC members.

You can submit news about your colleague's passing by going to http:c.AARC.org/transitions to provide any information about the member's obituary so that we can share it with the AARC membership and pay tribute. ■

SOCIAL SMOKING LEADS TO HEART RISKS

Social smoking — defined as smoking in certain social situations but not every day — was just as likely to lead to high blood pressure and high cholesterol as regular smoking in people taking part in The Ohio State University's Million Hearts educational program.

Overall, about 10% of the participants said they were social smokers. Another 17% admitted to being regular smokers. About 75% of all the smokers in the study had high blood pressure and 54% had high cholesterol. "One in ten people in this study said they sometimes smoke, and many of them are young and already on the path to heart disease," notes study author Kate Gawlik. She and her colleagues believe social smokers represent a chance to intervene before someone becomes a regular smoker. They suggest clinicians ask their patients not only if they smoke, but also if they ever smoke socially, i.e., in restaurants, bars, or other settings where people gather. The study was published in a recent edition of the *American Journal of Health Promotion*. ■

Artificial Lung Is in the Works

Children awaiting lung transplants are often confined to bed for months at a time. A new device being developed by researchers at Mississippi State University in conjunction with colleagues at the University of Pittsburgh may significantly improve their quality of life during the waiting period.

Using computational prototyping, they are working on digital models of a device called the Pediatric Paracorporeal Assist Lung (P-PAL). When fully developed, P-PAL is expected to be about the size of an adult fist. While it will involve tubes connected to the body via either the femoral artery or jugular vein, like larger devices for oxygenating blood cells while removing carbon dioxide, P-PAL will be small enough to let children get out of bed and enjoy being a kid while awaiting transplantation.

The researchers caution that the device is still years away from being used in patients, but they believe it holds significant promise for improving and prolonging the lives of children with lung diseases. ■

Patients' Employment and Insurance Status Suffer Following Illness with ARDS

Respiratory therapists are well aware of the toll that acute respiratory distress syndrome (ARDS) takes on their patients' health. New research suggests it has a detrimental effect on their ability to return to work as well. In a study conducted among 922 ARDS survivors who were interviewed by phone at 6 and 12 months after the onset of their condition, they found:

- 44% of people who held jobs before contracting ARDS were jobless one year after hospital discharge, costing them an average of about $27,000 in earnings.
- After one year, the percentage with private health insurance dropped from 44% to 30%, and the percentage enrolled in Medicare and Medicaid jumped from 33% to 49%.
- Little change was seen in the number of jobless survivors who were uninsured.
- People who experienced the longest delays in returning to work tended to be older, non-white, and hospitalized for longer periods of time.
- Men and women experienced similar delays in returning to work.
- Illness severity did not affect how long people were out of work.

The study appeared in a recent edition of the *American Journal of Respiratory and Critical Care Medicine*. ■

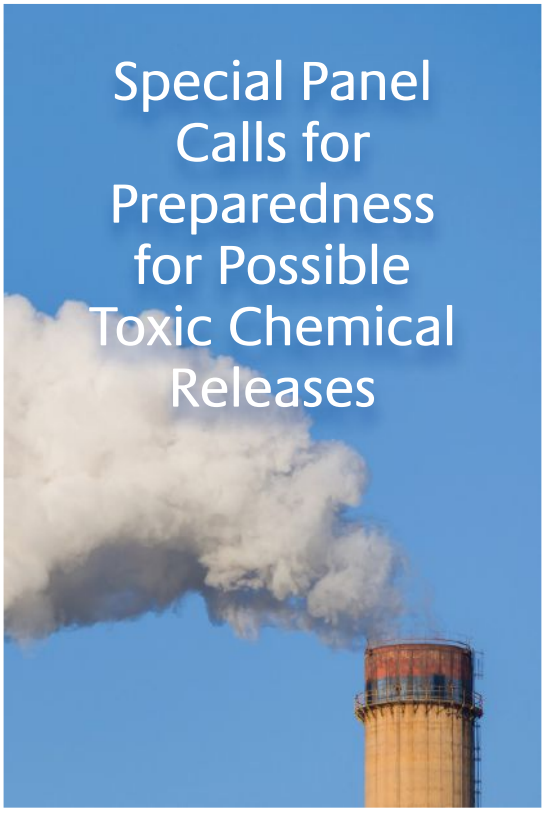
Secondhand Smoke Exposure Study Focuses on Amish Population

A new study conducted among members of the Amish population sheds some light on the effects of secondhand smoke and how they may be different in men and women.

University of Maryland researchers examined cross-sectional data on 3,568 Amish people who participated in three community surveys of cardiovascular health between 2001 and 2015. The surveys included questions on tobacco use and secondhand smoke exposure from family members who smoked. Participants also underwent blood samples, lung function testing, and an assessment of their vascular health.

Women who were exposed to secondhand smoke had a greater risk for cardiovascular disease, as evidenced by reduced HDL cholesterol, while men exposed to secondhand smoke tended to have a higher body mass index, higher fasting glucose, and lower heart rate. The study was published in a recent edition of *PLoS ONE*. ■

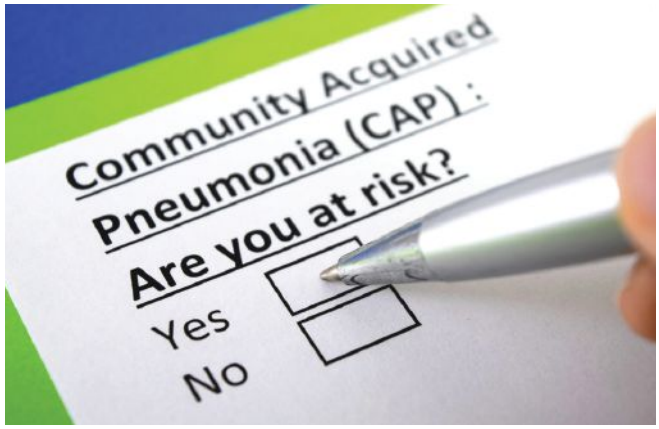
Special Panel Calls for Preparedness for Possible Toxic Chemical Releases



Many people believe it's not a matter of if an accidental or intentional release of inhaled toxic chemicals will take place, but when. The American Thoracic Society and the National Institutes of Health's Countermeasures Against Chemical Threats Program convened a 16-member panel to study preparedness for such an occurrence. The panel is now calling for the following actions:

- Design laboratory models to more closely mimic human exposure conditions and mechanisms and create uniform experimental conditions to validate results.
- Extrapolate pathophysiologic mechanisms from lung diseases that have different causes but produce similar patterns of lung injury, such as ARDS and bronchiolitis obliterans.
- Prepare a more robust global infrastructure to support acute and long-term epidemiological studies of toxic inhalational exposures and link these studies to laboratory discoveries.
- Work with industry to bring new medicines and devices to market.
- Reduce the time and expense of obtaining U.S. FDA approval for new medicines and devices.

The panel's report was published in a recent online edition of the *Annals of the American Thoracic Society*. ■



Too Many Community-Acquired Pneumonia Patients Fail Treatment

Research presented at the ATS 2017 annual conference suggests that guidelines for the treatment of community-acquired pneumonia (CAP) may need to be updated.

Investigators from LA BioMed looked at the medical records of 251,947 adult patients who were treated between 2011 and 2015 with a single class of antibiotics following a visit to their physician for treatment of CAP. Treatment failure was defined as the need to refill antibiotic prescriptions, antibiotic switch, or emergency room visit or hospitalization within 30 days of receipt of the initial antibiotic prescription.

The total antibiotic failure rate was 22.1%, and patients who were older or had comorbid conditions were more likely to need further treatment. "Our findings suggest that the community-acquired pneumonia treatment guidelines should be updated with more robust data on risk factors for clinical failure," says study author James A. McKinnell, MD. ■

Reducing Airway Inflammation

Fueled by a $2 million grant from the National Institutes of Health, researchers from Columbia University and University of Wisconsin-Madison are redesigning a drug compound first created to calm anxiety without dangerous side effects. They believe this redesigned drug could one day serve as a replacement for the inhalers now used to treat respiratory conditions.

The drug compound acts on a neurotransmitter in the brain called gamma-aminobutyric acid (GABA). When the researchers discovered that GABA receptors also exist in the lungs, the stage was set for the development of the potential new asthma drug, which could be delivered in pill form.

The asthma project is halfway into a four-year grant, and the researchers have confirmed that their compounds reduce airway inflammation while limiting blood–brain barrier exposure. They reported their findings in a recent edition of *Molecular Pharmaceutics*. ■

"Second Victims" Need Support, Too

A program implemented at Johns Hopkins six years ago to help what some call the "second victims" in traumatic patient care events — i.e., the health care professionals who provide that care — has helped save the institution nearly $2 million per year, say researchers publishing in a recent edition of the *Journal of Patient Safety*.

The program relies on a multidisciplinary network of peer counselors who contact fellow clinicians in need within 30 minutes of their request for help following an emotionally difficult care-related event, such as a patient in extreme pain, dealing with an overwhelmed family, or a patient being harmed through medical error. To gauge the financial benefit of the program, the investigators created a model based solely on nurses.

Study results showed the annual cost of the program came in at approximately $656 per nurse. That was compared to an estimated annual cost of $23,232 per nurse in lost productivity, time off from the job, and training for a replacement nurse if the nurse ended up quitting due to the traumatic event. ■

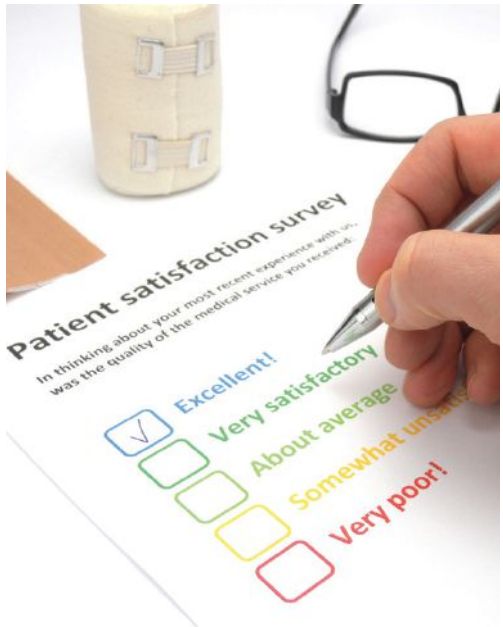
Learning What Patients Want

Keeping patients happy is key to ensuring your facility gets high marks on the patient satisfaction survey used by the federal government to help determine reimbursement rates. New research out of Ohio State University suggests simple changes in room design could help.

The study involved 61 patients and family members who had experienced at least one three-day stay in a hospital medical-surgical unit during the last 12 months. Small groups of participants walked through full-scale hospital rooms and were surveyed about general patient room design characteristics.

Results showed patients were most concerned about privacy and security. Specifically, they said they wanted their room to have a privacy curtain at the doorway that they could control so that they would not be "on display" to everyone outside in the hallway. They also wanted a room safe for their valuables, and they wanted their belongings to be left within reach at all times. Perhaps most significant for clinicians like respiratory therapists, patients wanted to know who was entering their room and what role they would play in their care.

The study appeared in a recent edition of the *Journal of Health Environments Research and Design*. ■



Strange But True...

Automated pharmacy: When most of us think of vending machines, we think of candy, or soda, or even cigarettes. New vending machines already in place in more than 200 locations around the country are dispensing something more healthful: prescription medications. InstyMeds, creators of the 1,500-pound machines, believe they will be welcomed on college campuses, in corporate offices, and even in doctor's offices.

More dust is better? Chinese researchers have found air pollution levels in major cities in the eastern part of the country are actually better when more dust blows in from the Gobi Desert. Why? It turns out dust plays an important role in fostering air temperatures that promote the development of winds that blow away man-made pollution.

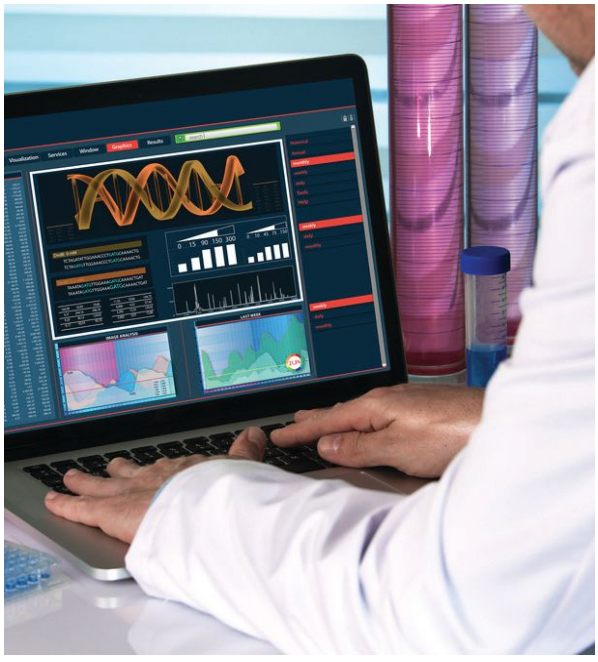
Multitasking: The Large Hadron Collider is best known for smashing protons, but now it's spawning portable accelerators with real world applications, too — including the treatment and diagnosis of cancer.

Genes, Smoking, and Heart Disease

According to Columbia University investigators publishing in a recent edition of *Circulation*, smoking degrades a genetic variation that normally protects the heart against the development of heart disease.

In a study that pooled genetic data on more than 140,000 people from 29 previous studies, the researchers analyzed 45 small regions of the genome that have been previously associated with a heightened risk of coronary heart disease (CHD) to see if, for some of these regions, the associated heart risk would be different in smokers than in nonsmokers.

The analysis showed that a change in a single DNA letter on chromosome 15 — near the gene that expresses an enzyme produced in the blood vessels called ADAMTS7 — was associated with a 12% reduction in heart risk in nonsmokers. However, smokers with this same variation had only a 5% lower risk of CHD. "Our findings suggest that interventions to inhibit this enzyme would be particularly beneficial for smokers, and they may also prove useful for anyone at heightened risk of coronary heart disease," notes study leader Muredach P. Reilly, MBBCH, MSCE. ■



Calendar of Events

AARC & State Society Programs

July 27–July 28, 2017
Columbus, OH
OSRC's 39th Annual Meeting
Contact: staff@pacainc.com or www.osrc.org

August 2–August 4, 2017
Biloxi, MS
Alabama Louisiana Mississippi Tristate Respiratory Care Conference
Contact: tristaterespiratorycare@gmail.com or www.tsrcc.net

August 9–11, 2017
Litchfield Park, AZ
51st AzSRC Annual Conference
Contact: ajla.sutkovic@honorhealth.com

August 17, 2017
East Greenwich, RI
RISRC 33rd Annual Conference and Exhibition
Contact: mcarnevale@lifespan.org

September 5–8, 2017
Myrtle Beach, SC
46th Annual SCSRC Conference
Contact: program@scsrc.org

September 14–15, 2017
Charleston, WV
West Virginia Society for Respiratory Care Fall Health Care Conference
Contact: cynthia.keely@gmail.com

September 19–20, 2017
Meredith, NH
VTNHSRC Education Conference
Contact: vtnhresp@gmail.com or www.vtnhsrc.org

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