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Arlene Zamora, RRT-NPS, wins the AARC Photo of the Year Contest!

Identifying Life-threatening Asthma in Kids

Arlene Zamora, RRT-NPS, won the AARC Photo of the Year Contest for her picture with Ivy Kuehne during trach care teaching in the neonatal intensive care unit of A. I. duPont Hospital for Children in Wilmington, DE.


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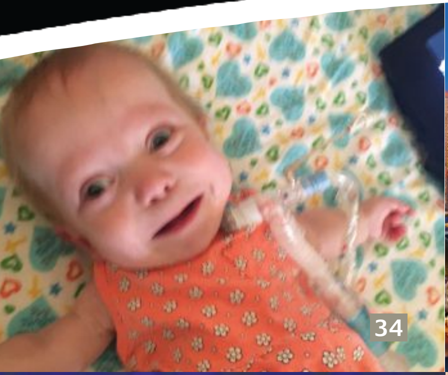

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The American Association for Respiratory Care has a Strategic Plan that includes its Mission and Vision Statements for 2015-2020.

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Are You Advocating for Your Oxygen Patients?

by Thomas J. Kallstrom, MBA, RRT, FAARC

That is a good question and one that we should all pay close attention to. If respiratory therapists do not advocate for our patients, then who will? Deficiencies in access to the correct oxygen devices abound for which we should be front and center as a patient advocate. We continue to hear about an ongoing problem with access to liquid oxygen (LOX), which is more of a struggle for our patients.

I witnessed this first hand while at a patient meeting at an American Thoracic Society conference this spring. The meeting was focused on the issue of patient accessibility to oxygen. Leadership from many clinical societies and medical associations as well as patient groups and individual patients attended this meeting. Valerie Chang who is founder of the Hawaii COPD Coalition and is also a State Advocacy Captain for the Hawaii COPD Foundation, was at the meeting. She informed us that in Hawaii “there are only providers of oxygen in Oahu and that none will provide LOX.” Thus, patients in a similar situation who require higher flows have no option but to use oxygen cylinders or portable oxygen concentrators (POCs). The concern is that POCs cannot adequately provide a flow of 4 LPM or above. Ms. Chang’s physician has ordered her to be on 4 LPM when she is exercising or exerting herself. This then puts her and other patients like her in an untenable situation without a delivery system that can accomplish this. This is not just a problem in Hawaii; we are hearing the same kind of comments throughout the United States.

about the author...

Thomas J. Kallstrom, MBA, RRT, FAARC, is executive director of the AARC.

Another oxygen-dependent patient who was in attendance at the same meeting related her oxygen-related frustrations. She is ordered for 3 LPM and 4 LPM on exertion. She uses oxygen cylinders only for ambulation and the flowmeter is maxed out at 3 LPM. She claimed the durable medical equipment supplier (DME) only provides her with e-cylinders and a regulator that maxed out at 3 LPM. The way she circumvented this was to purchase an additional small tank that can be placed in her purse. She then runs oxygen tubing from the tank, under her blouse to her mouth. Whenever she exerts herself, she relies on using the small tank (in addition to the e-cylinder) set at 1 LPM by placing the oxygen tubing to her lips. This patient is employed full-time and has to lug these tanks around to work.

Unfortunately with the reimbursement structure currently in place from Medicare, the variety of oxygen devices today is very limited, resulting in some DMEs offering fewer options for patients.[1] Declining reimbursement has resulted in patient anxiety and the risk of a device that ultimately may not provide the needed level of oxygen or the patient may decide to just not use the oxygen as a result. Ultimately, when oxygen is ordered, there needs to be a more in-depth thought process as to which is the most appropriate device(s), based on the patient’s cognitive level, mobility, lifestyle, health literacy level, adherence, and so on.

This is not just a Medicare reimbursement issue. As Medicare goes, so too do many third-party payers. So what can we do? The first thing is that respiratory therapists need to be part of the pre-discharge oxygen assessment. There are several options for the ordering physician to consider — placing a respiratory therapist as a consultant is a prudent action. Unfortunately, this is not as common as we would like to see it.[2] Primary care providers do prescribe oxygen therapy and might do so without the support of specialists or respiratory therapists, especially in small, geographically remote communities. Utilizing the skills of the respiratory therapist should be done in the hospital pre-discharge process and just as appropriately — but unfortunately far less frequently — in the physician's office post discharge. If you are interested in the post discharge arena, I recommend that you read a recent guidance document written by the AARC specifically for respiratory therapists who wish to expand their services into the physician office.[3]

Looking closer at oxygen access issues, there are important questions that patients and caregivers should ask of the ordering physician and the supplier of the oxygen. They include:

- How do I know that this oxygen system is the most effective for me?
- How often and at what flow should I be using?
- How does Medicare or third party insurance pay for this system?
- Is the DME allowed to provide me with used or reconditioned equipment?
- What happens if the equipment I have is no longer effective for me?
- What happens if my DME goes out of business?
- What do I do if I am ordered on LOX but the DME informs me they will no longer provide this? What are my rights?

The bottom line is that patients do have some options that can be taken should they come upon some of these roadblocks. Three immediate actions that the patient or caregiver should take when there is a concern or complaint are:

- Contact their physician to report the situation and ensure that he/she has sent the most recent letter of medical necessity to your supplier.
- File a Medicare complaint through 1-800-MEDICARE (633-4227). A Medicare representative can put you in contact with the Competitive Acquisition Ombudsman if problems persist. Additionally, there is a website that patients and caregivers can turn to should they want to file a complaint online.[4]
- Patients that are not on Medicare can contact their insurer customer service respresentatives to see what options are available.

Finally, I would direct you to an extensive set of frequently asked questions developed by Medicare that address oxygen coverage questions Medicare beneficiaries might have.[5] Another useful resource is a Medicare Guide on home oxygen that is also available from the agency.[6]

Traversing the oxygen supply landscape is not easy, especially for patients who have no support. That is why we as respiratory therapists must have a clear understanding of not only the regulations governing Medicare home oxygen therapy but also the resources available to help both the physician and the pulmonary patient navigate an increasingly complex health care system. Advocate? If we don't, who will? ■

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Ventilation for Life

Liberation from Mechanical Ventilation: Are Spontaneous Breathing Trials Still the Way To Go?

by John Davies, MA, RRT, FAARC

Liberating a patient from mechanical ventilation can be a challenging endeavor for clinicians. The term “weaning” was coined because earlier methods of identification of liberation potential involved a gradual withdraw of ventilatory support. Because the SBT involves a rapid removal of ventilatory assistance the more appropriate term should be liberation. Spontaneous breathing trials (SBTs) have become accepted as the best method to identify readiness for mechanical ventilation discontinuation based on a joint task force consensus on weaning in 2001. This task force consisted of experts from the American College of Chest Physicians (ACCP), Society of Critical Care Medicines (SCCM), and the American Association for Respiratory Care (AARC).[1] In 2007, another task force made recommendations regarding liberation from mechanical ventilation (MV). The group consisted of experts from the European Respiratory Society (ERS), European Emergency Society of Intensive Intensive Care Medicine (ESICM), SCCM, and the American Thoracic Society (ATS). Their recommendations pretty much mirrored the ACCP/SCCM/AARC consensus recommendations from 2007: 1) consider weaning as soon as possible, 2) SBT is the major diagnostic test (minimum of 30 minutes and either t-piece or low level pressure support [PS]), and 3) normalize support in between SBTs (in other words no PS wean).[2]

about the author...

John Davies, MA, RRT, FAARC, is a clinical research coordinator at Duke University Hospital in Durham, NC. His areas of study include mechanical ventilation and management of ARDS.

Automated weaning modes have become more popular and available to clinicians but should they replace SBTs as the standard for identifying readiness for liberation? The aim of this paper is to identify other suggested methods of identifying readiness for liberation and whether or not SBTs should be replaced with something else.

Spontaneous breathing trials

It is important for patients to be examined for liberation potential as early in their clinical course as possible. Failure to do so can result in unnecessary prolongation of mechanical ventilation and the risks associated with this, such as pneumonia, increased costs, and exposure to high driving pressures. In 1995, Esteban et al[3] identified that the SBT was the best way to recognize liberation potential. This group showed that the use of daily SBTs resulted in extubation three times more quickly than synchronized intermittent mandatory ventilation and two times more quickly than PS weaning. SBTs can be performed in several different ways: by t-piece, low levels of PS, continuous positive airway pressure (CPAP), or the use of automatic tube compensation. No one method has been demonstrated as superior to the others in terms of extubation readiness. One caveat with the use of t-piece SBTs: if a patient has cardiovascular compromise the sudden removal of positive end expiratory pressure (PEEP) has the potential to result in flash pulmonary edema.[3-4] So, in these instances, low levels of PS with PEEP, automatic tube compensation with PEEP, or CPAP would likely be safer alternatives for SBTs. What is clear is that SBTs should be performed for a minimum of 30 minutes up to a maximum of two hours.[6] If a patient passes the spontaneous breathing trial the decision to extubate is based on other clinical issues such as ability to protect the airway, amount and quality of secretions, and strength of cough (clinical assessment). If the patient fails the

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SBT, the following should occur: 1) search for reversible causes of failure and correct them, 2) repeat the SBT in 24 hours as long as the patient is clinically stable, and 3) place the patient on stable and comfortable lung protective ventilation until the next SBT. The type of mode used in between SBTs should be based on clinical assessment. Few data demonstrate that a gradual reduction in support reduces time on the ventilator. In fact, this practice may cause undue fatigue and waste clinical resources.[1-2] Other indices, such as the rapid shallow breathing index among others, have been suggested for identification of liberation potential. However, these indices appear to be more predictive in a population sample but less so on an individual basis.[1] As mentioned earlier, the use of SBTs was a recommendation from a task force consensus from three influential groups some 15 years ago.[1] Since that time, a new mode of MV has been introduced called proportional assist ventilation (PAV). PAV is a spontaneous pressure-targeted mode that delivers both intra-breath pressure and flow variability that act to amplify the patient's effort to the extent set by the clinician. Although not an automated weaning mode it has been suggested that, if used appropriately, PAV can be an effective weaning mode. A recent study by Texeira et al[7] compared the use of PAV in terms of weaning to the traditional methods of t-piece and PS methods. They found no difference in extubation failure or duration of MV.

Automated weaning modes

There are also several new feedback modes that have been introduced since the ACCP/SCCM/AARC task force recommendations were published. They go by various names and are designed to automatically reduce the level of ventilatory support as the patient improves to a "minimal" level. They function by either delivering a combination of pressure-assist control (PAC) or PS breaths to reach a target minute ventilation (VE), tidal volume (VT), and respiratory rate (RR), or gradual reduction in PS levels based respiratory rate and partial pressure of end tidal carbon dioxide ($PETCO_2$).

Adaptive support ventilation (ASV) is a mode of MV that varies the pressure level in both mandatory and spontaneous breaths to target minute ventilation, VT, and RR based upon ideal body weight and the percentage of VE delivered by the ventilator. Two recent trials seem to support the notion that ASV shortens discontinuation times. Chen et al[8] compared ASV to a gradual PS wean in 79 mechanically ventilated patients. Kirakli et al[9] compared ASV to a gradual PS wean in 97 patients with COPD. Both of these two studies showed lower discontinuation times with the use of ASV. However, in both studies, there was either no comparison to SBTs, as both control groups were based upon a gradual PS wean. As mentioned previously, there is little supporting evidence to show that a gradual PS has any value.[10] A recent study by Kirakli et al[11] compared ASV with pressure assist control in terms of weaning duration. The results were a shorter weaning duration in the ASV group. However, a couple aspects of this study require more scrutiny. First, the control group was kept in pressure assist control for the whole length of mechanical ventilation and PSV was only considered after the third SBT failure. This is deviation from the general consensus that PSV should be used as a weaning tool after failed SBTs to provide comfortable resting support with optimal patient-ventilator interaction.[6,12] Synchrony, sedation, and fluid management protocols also were not addressed in the study — any one of which, if not balanced between the groups, could have affected the results. There was also no mention of clinician to patient ratio which could also affect the timeliness of weaning. ASV may ultimately have a role as more of a diagnostic tool alerting clinicians that patients may be ready for an SBT.

Another method of automated weaning is Smartcare™ which is available only on Draeger ventilators. Once activated SmartCare™ continuously employs a weaning protocol in PSV mode based on measurements of RR, VT and $PETCO_2$ averaged over 2 to 5 minutes. The idea is to keep the patient in a "comfort zone" while reducing support to a minimal level. An initial study by Lellouche et al[13] showed a decrease in weaning duration using SmartCare™ versus usual weaning practice. However, the control group was flawed because weaning was carried out according to local practice in which SBTs were not done in a timely manner. A more recent study by Taniguchi et al[14] compared SmartCare™ to protocolized weaning in a well-staffed intensive care unit and found that the duration of weaning using SmartCare™ was almost double that of the protocolized group.

Despite the lack of evidence supporting automated weaning being superior to the use of routine SBTs, there may be situations where automated weaning may have some use. These scenarios may include "routine" patients without underlying comorbidities and clinical areas where staffing/expertise are limited. Another way that automated modes may be useful is that they have the potential to reduce practice variation in clinical areas without protocols. Clinicians must be aware however that the use of automated weaning modes does not obviate the need for careful and ongoing patient assessment.

Summary

Although ventilator technology has evolved over the years with more automated modes appearing there is still no compelling evidence that these modes are either superior or even as efficient as the use of routine SBTs. However, automated modes may have some use as diagnostic indicators in clinical areas with high patient-to-clinician ratios. For the time being the use of routine SBTs should still be considered the "gold standard" for liberation from mechanical ventilation. ■

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Three Steps To Reduce Alarm Fatigue and Improve Patient Safety

By Greg Spratt BS, RRT, CPFT

Patient monitors are designed to serve as an extension of the nurse and other clinicians for observing changes to key physiologic parameters. Monitor alarms are designed to alert caregivers to changes in the patient's condition that may indicate the need for intervention. These alarms are essential to patient safety across the health care continuum and in many cases, are lifesaving.

Due to the proliferation of monitors designed to provide clinicians with more physiologic information and improve patient safety, the number of alarms encountered by clinicians has risen proportionally. Studies indicate that the majority of alarms do not require a clinician intervention.[1,2] Clinicians overwhelmed by the sheer multitude of beeps may ignore alarms (i.e., "alarm fatigue") sometimes with catastrophic results.

about the author...

Greg Spratt BS, RRT,CPFT, is the Director of Clinical Marketing at Medtronic. Prior to joining Medtronic in 2009, he spent 27 years in patient care and management and served as the AARC's Home Care Section Chair.

What is "alarm fatigue"?

While there's not a standard definition of alarm fatigue, a 2011 summit convened by the Association for the Advancement of Medical Instrumentation (AAMI), Food and Drug Administration (FDA), the Joint Commission, American College of Clinical Engineering (ACCE), and Emergency Care Research Institute (ECRI) exploring clinical alarms[3] had this to say:

- Alarm fatigue is when a nurse or other caregiver is overwhelmed with 350 alarm conditions per patient per day.
- Alarm fatigue is when a patient can't rest with the multitude of alarm signals going off in the room.
- Alarm fatigue is when a true life-threatening event is lost in a cacophony of noise because of the multitude of devices with competing alarm signals, all trying to capture someone's attention, without clarity around what that someone is supposed to do.
- Alarm fatigue is compounded by inconsistent alarm system functions (alerting, providing information, suggesting action, directing action, or taking action) or inconsistent alarm system characteristics (information provided, integration, degree of processing, and prioritization).
- Alarm fatigue is a system's failure that results from technology driving processes rather than processes driving technology.

ECRI, an independent, nonprofit organization that researches the best approaches to improving the safety, quality, and cost-effectiveness of patient care, has published the Top 10 Health Technology Hazards list annually.[4] Alarm hazards have been on every list since 2010 and topped the list from 2012 to 2014.

The Joint Commission released a Sentinel Event Alert (SEA)[2] on Medical Device Alarm Safety in Hospitals and a National Patient Safety Goal on Alarm Management.[5] The SEA stated alarm hazards are a "frequent and persistent problem," with 98 alarm-related events reported between January 2009 and June 2012 — 80 resulting in death and 13 in permanent loss of function. The organization also recognized that alarm-related injuries are significantly under reported, and that the total number is likely much higher.

The Joint Commission cites "alarm fatigue" as the most common contributing factor to alarm-related events. Many of the events occurred in areas with lower clinician-to-patient ratios including telemetry units, the emergency department and the intensive care unit.

In addition to the potential hazard to patient safety from alarm fatigue, numerous alarms that don't require intervention also create disruption to the clinician's work, which has led to the term "nuisance alarm." These disruptions may detract from the care and oversight of other patients, consume time from a busy schedule, and cause a loss of confidence in the monitors.

Much of the discussion around alarm management centers on the development of better technology. While manufacturers have released a number of alarm reduction software solutions shown to reduce alarms,[6] three relatively easy steps can be taken today to significantly reduce your non-actionable alarms using any monitor.

Step 1: Manage default alarms

The Joint Commission cited that common causes of alarms include setting the alarm thresholds "too tight," and default alarms not adjusted to individual patient needs.[2] When establishing a monitoring protocol for the post-operative general care floor (GCF), it is not uncommon for the facility to look to traditional monitoring environments such as the ICU for establishing default alarm settings. ICU patients are generally at a much higher acuity level where alarm thresholds are set relatively close to the patient's baseline values to provide early warning to small patient changes.

Experienced users report that alarm settings on the post-op GCF and other lower acuity areas can be set "wider" while still providing adequate notification of significant changes in the patient's condition. In a survey of 21 experienced capnography users, alarm limits for high/low $etCO_2$ and high/low respiratory rate were set differently based on the care environment being monitored (See Table 1).[7] For example, high/low respiratory rate (RR) alarms were set at average values of 45.0 and 4.5 breaths per minute respectively on the GCF compared to 32.0 and 9.0 in the ICU. High/low $etCO_2$ alarms were set at average values of 60.0 and 8.5 on the GCF compared to 50.0 and 25.0 in the ICU. Reported GCF alarm settings from this survey correspond to other reports from the literature.[8,9]

In a study of alarms on the medical/surgical floors of a community hospital, alarms for heart rate were reduced by more than 50% with a simple limit adjustment of high HR from 120 to 130 bpm and a 36% or 65% reduction in SpO_2 alarm load was achieved by reducing the SpO_2 limit from 90% to 85% or 80% respectively.

A similar study on a cardiac telemetry unit found that small adjustments including changes to the low and high HR limits resulted in an overall 89% reduction in audible alarms without requirement for additional resources or technology.[11] Staff and patient satisfaction also improved. There were no adverse events related to missed cardiac monitoring events, and the incidence of code blues decreased by 50%.

Customizing alarm settings to individual patient needs

Over-reliance on a standard set of default alarms for all patients ("one size fits all") may also contribute to the alarm burden. Alarm settings should be customized based on individual patients when appropriate. For example, baseline $etCO_2$ and SpO_2 values for a patient with severe COPD would be significantly different than for a patient with healthy lungs.

In a study of changes in alarm management in a medical progressive care unit, nurses were trained to individualize patients' alarm parameter limits and levels.[10] Critical monitor alarms were reduced 43% from baseline data.

In an American Association of Critical-Care Nurses (AACN) Practice Alert on alarm management, there is a recommendation to customize the alarms to meet the needs of individual patients.[12] They recommend, "Set customized alarms within one hour of assuming care of a patient and as the patient's condition changes."

Step 2: Educate the patient and family

Another cause of alarms is the patient removing a monitor sensor. Too often, patients aren't properly instructed about why they are being monitored. If patients

Table 1. Average Capnography Alarm Limits Used by Care Environment

Environment	$etCO_2$ High	$etCO_2$ Low	RR High	RR Low	No Breath Delay
Procedural Sedation	52.5	23.0	24.0	6.6	17.1
Emergency Depart.	50.8	24.5	28.3	8.3	13.2
General Floor	60.0	8.5	45.0	4.5	27.5
OR-PACU	56.7	19.3	24.0	8.0	19.3
Intensive Care Unit	50.0	25.0	32.0	9.0	15.0
All	53.8	20.2	30.3	7.1	18.3

are not educated about why the monitor is being used and do not understand the benefit it provides, there is a greater chance that he or she will remove the interface creating additional alarms. Experienced users report that by educating the patient and family prior to the procedure and reinforcing it during monitoring, patients are more likely to be compliant.

- "Patient education is the key. A well-educated patient and family are key to having successful compliance with using capnography. Once the patients and the families understand that it's being done for safety, for their safety, they're much more complaint. They don't have any issues wearing the cannulas."
  - Harold Oglesby RRT, Director of Respiratory Care, St. Joseph/Candler Hospital, Savannah, GA[13]
- "Observational studies substantiate our finding that continuous monitoring by capnography is feasible in very young children."
  - Jenifer R. Lightdale, MD, MPH, Children's Hospital Boston, Boston, MA[14]
- "Newer nasal-oral cannulas used to measure capnography in spontaneously breathing patients are well tolerated by children."
  - Melissa Langhan, MD, Associate Professor of Pediatrics Yale School of Medicine,New Haven, CT[15]

Education of the patient and family is most effective when it is simple and brief. Tools are often available from the manufacturer to assist with the education.[16] Key components of education include:

- Explain that the medication that will be given can make breathing slow or shallow, which could be dangerous if not monitored. State that the monitor will alert clinicians to changes in breathing before any harm occurs.
- Let patients and family members know that alarms alert clinicians to a change in breathing. Explain that alarms can serve as a reminder to the patient and family of the need to take deeper breaths.
- Remind the patient that if the interface is removed for brief periods, for activities such as eating or getting out of bed, it should be replaced immediately after the activity.
- Routine postsurgical activity, like sipping water or eating ice chips, does not interfere with ventilation monitoring. But care should be taken not to introduce liquids into the sampling ports as this will block the sample line and create an alarm.
- Explain that generally, patients will be monitored until the physician believes there is no longer a risk of slow or shallow breathing. This period depends on the type and duration of medication prescribed, as well as the patient's response to the medication.

Step 3: Educate staff

A clear knowledge of the operation, alarm features, and limitations of monitors by the clinicians using the monitor is a key to assessing and understanding causes of alarms, and taking steps to reducing alarms. The AACN Practice Alert on Alarm Management lists "provide initial and ongoing education on devices with alarms" among their recommendations.[12]

Education increases the understanding of how monitoring systems and their alarms function and should be managed. The American College of Clinical Engineering (ACCE) points out that, "Such learning must reach the level of operational effectiveness rather than just intellectual knowledge."[17] In a quality improvement project, retraining nurses was the first step in a multipronged approach to reduce the number of false alarms.[1] This project demonstrated that after receiving education and retraining, nurses individualized alarm settings at the outset, instead of adjusting settings in response to continual activation of an alarm.

Such training should include discussion of proper sensor selection, application, and replacement.[12] Clinicians should be aware of monitor limitations that reduce effectiveness based on patient characteristics (e.g., use of oximetry with certain pigmentations or drugs).

As mentioned previously, a retrospective analysis of alarm data has been key to several efforts that have shown positive results.[10,11] A clear understanding of how to review alarm data, trends, waveforms, and other available data can be invaluable in identifying causes of alarms. In many cases, a review of such data may reveal that multiple alarms thought to be "false" are indeed real when explored in more detail.

Papers from Maddox describe several case studies where retrospective review of monitor alarm data and trends was useful in identifying underlying causes of alarms that resulted in changes to management correcting the underlying problem.[9,18] One such example cited by Maddox is patients with underlying sleep apnea or hypoventilation syndromes. Sleep apnea is common in hospitalized patients and the vast majority may be undiagnosed.[19] Commonly used sedatives, sleep aids, analgesics, and even antihistamines may exacerbate the condition. Patients with sleep apnea may trigger repetitive apnea, low RR, SpO_2 or $etCO_2$ alarms, and the sound of the alarm or the nurse entering the room may wake the patient resulting in "self-correction" from the alarm. This can lead to the perception that the alarm was "false." Review of trend data is helpful in identifying these conditions leading to appropriate management and elimination of many alarms.

Along with implementation training, education should continue at the bedside. Several programs have identified the benefit of using respiratory therapists' expertise in respiratory monitoring to help educate other clinicians that may be less familiar with its benefits and limitations.[20,21]

Summary

Reduction of non-actionable alarms is an ongoing challenge as monitoring proliferates throughout and outside the hospital. By adjusting alarm default values, educating the patient and family, and ensuring clinicians using the monitors understand its operation, studies show that significant reductions in "nuisance" can be accomplished. ■

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Effective Ways to Monitor Patients Receiving Opioids

By Kevin McQueen MHA, RRT, CM

Every day across the United States, thousands of patients in hospitals require opioid pain medications due to injuries, chronic pain ailments, or surgical procedures. While the majority of individuals receiving opioids will have no complications, there remain a small percentage of patients that are at higher risk for unfavorable outcomes. Patients receiving opioid pain medications place tremendous trust in the health care professionals caring for them. Most Americans believe that physicians, nurses, and respiratory therapists possess all of the education and training required to keep their patients safe from harm or adverse events. However, even with the best of intentions, many hospitals continue to fall short of protecting patients from respiratory depression and will inadvertently injure, or even worse, fail to rescue patients in time to prevent death.

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Due to a lack of any nationally mandated regulatory standards requiring a specific category of electronic monitoring, the types of devices and frequency of monitoring for respiratory depression while patients are receiving opioids varies tremendously from hospital to hospital.[1] The monitoring disparity became exceptionally clear back in 2014, when healthcare professionals from 8 hospital systems in San Diego got together as part of the San Diego Patient Safety Council (SDPSC) to create a tool kit designed to assist hospitals with assessing their opioid pain management programs and improving the levels of respiratory monitoring. The SDPSC found monitoring processes ranging from minimal monitoring, hospitals using only random spot checking with pulse oximetry every 4 hours, to comprehensive monitoring with continuous pulse oximetry and capnography on all patients receiving opioid medications.[1]

The SDPSC set forth with the idea of creating a detailed tool kit containing evidence-based best practices and generalized consensus related to monitoring of patients receiving opioid medications. The goals of the tool kit project included: eliminating preventable deaths, reducing sentinel events, decreasing adverse drug events, reducing length of stay and transfers to higher levels of care, reducing the use of opioid reversal agents such as naloxone, and to reduce hospital liability.[1]

The scale of the problem

Opioid medications given alone or in conjunction with other sedation-causing medications may lead to opioid-induced respiratory depression (OIRD) in approximately 0.5% to 2% of post-operative med-surge patients.[2,3] Overdyk and Guerra[2] noted the most common events in hospitals preceding cardiac arrests were respiratory related with nearly half of those patients receiving opioids prior to the event. The Joint Commission's Sentinel Event database (2004-2011) also noted that 29% of opioid-induced adverse drug events were related specifically to inadequate monitoring.[4,5]

Preventing opioid-induced respiratory depression and adverse events takes more than placing patients on physiological monitoring devices. Health care organizations have to start by thoroughly assessing their opioid pain management processes and educating physicians, nurses and RTs on the risks associated with the use of opioids and other sedation causing medications. Often patients will receive a potpourri of medications such as opioids for pain, anti-anxiety medication for stress, anti-emetic for nausea, and muscle relaxants for muscle cramping and spasms. Combining certain types of medications may have an increased sedation effect and can easily lead to respiratory depression.

Opioid delivery

Opioid medications may be delivered via several different methods including orally, intravenous push, and patient controlled analgesia pumps (PCAs). The type of monitoring needs to correlate to the individual patient's risk level, opioid dosage, and the other medications being given.

Monitoring tools for assessing respiratory depression

Preventing respiratory depression requires a multidisciplinary approach that should include physicians, pharmacists, nurses, RTs, patients, and family members. Implementing the use of physiological monitoring devices alone will not keep patients safe. The SDPSC recommends that health care organizations follow the eight steps outlined in the tool kit.

- Creating a systematic clinically-proven approach to assessing patients for risk factors
- Identifying each patient's individual risk level
- Determining if there is a need to monitor
- Selecting the most appropriate monitoring method
- Educating, engaging and coaching staff, patients and family members
- Monitoring the patients and determining when it is safe to discontinue
- Intervening if respiratory depression occurs
- Documenting, communicating, and evaluating

Key concepts to remember when selecting type of monitoring

Pulse Oximetry – Pulse oximetry has the ability to measure oxygenation but not adequacy of ventilation, which may limit the ability to recognize respiratory compromise in a timely manner before it reaches the level of clinically significant. Patients receiving supplemental oxygen may display adequate oxygen readings even in situations with extreme respiratory depression.[6]

Capnography – Capnography has the ability to measure perfusion and ventilation. Capnography is more sensitive to breath-by-breath changes and provides an early indicator of respiratory depression.[6] Certain brands of capnography may be used in conjunction with PCA pumps, where the device will automatically shut off the ability to provide additional opioid doses until the device alarm is reset.

Acoustic Respiratory – Acoustic monitoring uses an adhesive sensor with an integrated acoustic sensor to measure respiratory vibration. Results have been found to be similar to capnography and may be useful in patients who do not tolerate a nasal cannula or face mask.[5]

Multi-parameter – Monitoring devices that include the ability to monitor multiple parameters. In certain situations these types of monitors may offer the most "bang for the buck," because the single device offers the ability to monitor both oxygenation and ventilation.

One of the most important concepts coming out of published literature is that monitoring needs to be continuous. Spot checks with pulse oximetry or capnography may lead clinicians into a false belief their patient is safe. When spot checks are conducted, patients tend to be awake or nearly awake which stimulates respiration and may not be indicative of decreased respiratory efforts when the patient is asleep or becomes more sedated. Random spot checks mean that patients are not being monitored approximately italicize 96% of the time.[7]

Role of respiratory therapists

Opioid-induced respiratory depression provides RTs with an excellent opportunity to showcase their unique training and skill-sets surrounding respiratory system assessment. RTs can assist physicians and nurses in identifying if patients are displaying adequate ventilation or oxygenation changes that may indicate respiratory compromise. While nurses are the "conventional" clinical providers most commonly seen in hospitals monitoring patients receiving opioids, RTs should play a key role as experts or consultants with assessing and making recommendations in difficult cases or high-risk patients.

Summary

RTs should lead the charge when it comes to preventing adverse events linked to opioid-induced respiratory depression. RTs need to be involved with hospital policies related to any types of respiratory assessments or monitoring. We need to reduce the over-reliance on pulse oximetry as the only means to alert clinicians of pending respiratory compromise, especially in patients receiving supplemental oxygen. The goal must always be to improve patient safety by promoting education on the safe use of opioid medications, best types of monitoring devices to use depending on the patient care situation, limitations of monitoring technology, improved observation and assessment skills. ■

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Cystic Fibrosis Infection Control

by Jeremy Parks BS, RRT

In 2013, waves of controversy surged through the cystic fibrosis (CF) community when the Cystic Fibrosis Foundation (CFF) released an update to their Infection Prevention & Control (IP&C) Guidelines, revising the 2003 edition. The new guidelines carry more restrictions, causing much debate in the CF community. Many in the CF community argued against the guidelines. This article is intended to make readers aware of the changes. Along the way I'll give my opinion as a patient and therapist. So, are the changes necessary? Is IP&C *that* important in the CF community?

IP&C **is** important in the CF community. We know most of us with CF chronically carry various microorganisms in our lungs, especially in adulthood. These microorganisms vary in severity and mortality rates, and can spread from one CF patient to another. It is important to understand how microorganisms are contracted (infection), prevent them from spreading (prevention), and keep them controlled/contained (control). Generally speaking, if you can keep the lungs of a patient with CF clear of chronic infection, the patient will be healthier, will have fewer exacerbations, and will live longer. I ***want*** to live a longer, healthier life and spend less time in the hospital sick. IP&C strategies may help!

Guidelines, in general, need reviewing and updating. Based on new data regarding the spread of pathogens, the CFF updated the almost decade old IP&C Guidelines. Ten additional strains of *Burkholderia cepacia* complex have been identified since 2003.[1] Several outbreaks of *B. cepacia* strains including *B. multivorans* and *B. dolosa* occurred, and both are now newly identified.[1] These new strains showed rapid declines in affected patients and an increase in mortality. Nontuberculous mycobacteria (NTM), in particular, *Mycobacterium abscessus*, is now more common in patients with CF and has been associated with declining lung function. Over 50% of adults with CF culture NTM.[2] As a patient, declining lung function means dosing with antibiotics through pills or intravenously as an inpatient, and likely more treatments sets per day. Right now, I do two sets of treatments a day for approximately 2 hours. Spending two hours daily fighting CF is a pretty big burden. Adding to that time multiplies that burden. More strains of resistant pseudomonas associated with increased morbidity and mortality were discovered.[1] The CF community as a whole underestimated the severity of chronic methicillin-resistant staphylococcus aureus (MRSA) infection in the lungs.[3] Once thought of little concern, MRSA has shown an increase in morbidity and mortality. New data suggests droplet transmission may cause cross-contamination in patients with CF. Recent studies found microorganisms (specifically pseudomonas aeruginosa, the most common bacteria cultured in the lungs of a patient with CF) suspended in the air 6 feet from patients with CF in various places: performing pulmonary function tests (PFTs), in hospital rooms, in hallways outside the rooms, in the clinic, and in any room after performing chest physical therapy (CPT).[1] The bacteria can remain in the air for as much as 30 minutes, which was previously unknown. The CFF referenced the above data as supporting evidence for changes made to the guidelines.

The CFF made 77 total recommendations in the 2013 IP&C Guidelines. This paper highlights nine of the key changes, some of which affect RTs and some affect the patients personally.

about the author...

Jeremy Parks is an RRT from St. Louis, MO currently employed at Barnes-Jewish Hospital as the Program Lead over Education for the Respiratory Care Services department. He has been a therapist for 10 years, primarily working in the surgery/trauma and cardiothoracic ICUs. He also happens to have cystic fibrosis. He is 32 years old and was officially diagnosed with CF at the age of 2.

2003 Guidelines[4]	2013 Guidelines[1]	My View
I. Use standard precautions according to CDC/HICPAC recommendations.	Use contact precautions on all patients with CF including clinic and PFT lab and ALL hospital areas.	Ensures that patients are more safeguarded against cross-contamination. Assumes every CF patient may have a pathogen that could be transmissible. I always wondered why it was mandatory in the hospital when staff may see a couple CF patients, but not in the clinic when they go from CF patient to CF patient all day long.
II. No recommendations for wearing a mask except when on droplet precautions.	Patients with CF wear a mask when inside the healthcare facility except during PFTs and in the exam/hospital room.	Some patients with CF practiced this already, most did not. It makes some patients, including myself, feel very self-conscious. When you are walking around with a mask on, even in a hospital setting, people tend to stare and often avoid you like the plague. They probably think you have the plague. It is a nuisance, but done for patient safety. It's due to the new data on droplet transmission as a way of cross-contamination between patients with CF.
III. Single patient room for patients with *B. cepacia.* Single patient room when possible or a shared room without a patient with CF.	Single patient room for all patients with CF.	Who wouldn't want a private room every time? Ensures patient safety.
IV. No specifications on where/when to perform PFTs.	Perform PFTs in: • An exam room at the beginning of the clinic visit • A negative pressure room • A lab with HEPA* filter • A lab without HEPA filter allow 30 minutes between patients	I cough a lot during PFT's as do most patients with CF. Makes sense to implement these precautions.
V. Follow manufacturer recommendations for care of the nebulizer. Disinfect and rinse with sterile water between treatments.	• Disposable nebulizers: Rinse with sterile water, wipe mask/mouthpiece with alcohol, discard every 24 hours. • Reusable nebulizers: clean, disinfect, rinse with sterile water (following cold disinfection) air-dry away from sink. Can reprocess via CFF recommendations for home care or manufacturer instructions for sterilization/disinfection.	We care for our nebulizers at home this way and carry that same standard across to the hospital setting.
VI. Health care personnel with CF to avoid caring for patients with CF or maintain distance of 3 feet.	Health care personnel with CF will not to care for patients with CF.	Common sense to me. Needed to be put into writing.
VII. Ensure sufficient chlorination of pools, hot tubs, etc.	Avoid hot tubs, spas, stagnant water. Sufficient chlorination in pools.	Where's the dislike button? I love hot tubs! It's due to the evidence of bacteria, more specifically *Pseudomonas aeruginosa*, found in hot tub water and air surrounding hot tubs.
VIII. Patients with CF to receive counseling about career in health care and risks.	Patients with CF to receive counseling about career in health care and risks.	Highly agree. More detailed emphasis was placed in the actual guidelines this time about counseling. More adults with CF are entering the workforce and need to be educated about risks of various career choices. I do not regret my decision to be in the respiratory care profession; however, I was uninformed of the risks.
IX. CFF event attendance: patients with CF allowed, maintain 3 feet distance from other patients with CF	CFF event attendance: Outdoor: May attend, maintain 6 feet from other patients with CF Indoor: Only 1 CF patient allowed at a time	See below

*HEPA indicates that high-efficiency particulate arrestance, also sometimes called high-efficiency particulate arresting or high-efficiency particulate air, is a type of air filter.

The biggest topic of controversy and debate was/is the update to the attendance policy. It takes away access to events such as the NACFC (North American CF Conference), which inhibits people with CF from getting involved and learning about their disease. Other alternatives are provided in the form of webcasts and teleconferences. However, nothing compares to being present. Not to mention the vendor exhibits and other educational opportunities one could not access while sitting at home. I could write an entire article debating the restriction. In fact, several with CF have, including the collaboration of four CF patients published in *CHEST* in April 2014.[5] They did a fantastic job. The debate largely focuses around taking away the ability for adults to make educated decisions for themselves. I think of the movie *iRobot*. In the movie, robots decide humans are unsafe to think and act on their own. The robots take control of the humans, making decisions for them. To patients with CF, being restricted from attending the NACFC or any other indoor CFF conference, without our approval, feels much the same. One final recommendation the CFF made was to address the issue of education for everyone involved in CF care, more specifically patients and parents.

So, what can health care professionals, in particular respiratory therapists, do to help with IP&C in the CF population? Follow the precautions laid out by the 2013 CFF IP&C Guidelines. As I've said in all of my presentations over the years, RTs are the most important clinician in CF patient care in the hospital. They spend the most time with us. A lot of clinicians and providers can become lax with following precautions. As an RT, I understand. It's easy to want to take shortcuts such as draping the gown over your head without placing your arms in. However, when an RT is with us for 45 minutes to an hour, gowned and gloved (and at Barnes-Jewish Hospital performing manual CPT), they are setting the example for everyone. You're also ensuring my safety. I don't want to have to hold every staff member who enters my room responsible for my safety. I would much rather they take the initiative and hold themselves responsible. I have a wife and three children to live for. They want me around as long as possible. Catching a bug from my fellow CF patient next door is ***not*** going to help me live a longer, healthier life. So, fellow RTs, be the trend setter and set the bar high for the other health care providers!

In conclusion, the changes made to the IP&C Guidelines have my stamp of approval, except for that pesky attendance policy. The CFF has the very difficult task of ensuring patients with CF are safe in all environments. They oversee 120+ accredited CF Care Centers.[6] They must be stringent to a point. The CF community as well as other disease communities looks to them to set the standard of care. They have a certain amount of liability and a lot of responsibility. The objective for the guidelines is stated below:

> The primary objective of the guideline is to provide recommendations to reduce the risk of transmission and acquisition of CF pathogens by individuals with CF and to provide a more comprehensive understanding of effective strategies to optimize safety for this unique population.

I respect the CFF. They have the best intentions and do great work. In 2014, the median life expectancy for patients with CF rose to 41, and for the first time EVER, the number of adults 18 and older with CF outnumbered children with CF![7] Over half the patients with CF are adults! Pseudomonas infections have declined from 60% in 1994 to 48% in 2014.[7] These are all, in part, thanks to the excellent work of the Cystic Fibrosis Foundation. They are upholding their vision statement and adding tomorrows to the lives of patients like myself. As do all of you reading this. Thank you for your hard work and all you do for the CF community! ■

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Become an NBRC Item Writer

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

Part of the reason there is a high level of confidence in the validity of decisions based on examinations produced by the National Board for Respiratory Care (NBRC) relates to the fact that examination content originates from people who provide respiratory care. Item production could be handled differently. The NBRC could hire a therapist or two to comb through resources for content of items and problems. In comparison to the production method that is used, the NBRC has concluded that such a result would be less strongly related to the practice of respiratory care. Keeping providers of respiratory care involved in the production of examination content is critical.

Understanding construct irrelevant variance

The construct we intend to measure with NBRC examinations is the ability to provide respiratory care. If test takers are supposed to respond to items about respiratory care, but test scores go up or down for reasons unrelated to respiratory care competence, then this is called construct irrelevant variance. Construct irrelevant variance weakens valid inferences from test scores.

Construct irrelevant variance can take several forms, many of which are out of the control of those producing examination content. As an example, some test takers may become fatigued while taking their examinations. They are unable to express their full abilities when submitting responses toward the end of an examination so their scores decrease. In another example, some test takers could be distracted by something in the testing environment. Here again, test scores could decrease from what they would have been without the distraction.

Fatigue and distraction tend to decreased test scores, which could lead to false-negative outcomes for candidates who seek a credential. Patient care may be negatively affected in an indirect way because it may be more challenging to staff a hospital or an ICU because a new hire remains limited in what he or she is authorized to do.

Scores can increase and candidates may pass as a result of construct irrelevant variance. If a writer tips off the key because of the way an item or problem section was constructed, and the examination producer does not catch the flaw, then some candidates may get one more point than their abilities deserve. If a candidate has prior knowledge of some items, then the impermanent increase in knowledge could lead to an artificially high score. Construct irrelevant variance leading to score inflation directly puts patients at risk, so the NBRC is vigilant about preventing such occurrences.

about the author…

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

Become an item writer

If working within the item production system sounds interesting to you, then the NBRC encourages you to participate in the process. The NBRC continues to pay writers for each item and problem submitted in an acceptable style. The NBRC owns the copyright over each item or problem for which payment is made, which implies that a writer cannot use the content for another purpose. A writer who considered reusing content submitted to the NBRC could give some people advanced knowledge of examination content, which could directly lead to the negative patient care consequences described above. Hence, the NBRC expects writers to behave in good faith regarding the NBRC's ownership of examination content.

Because effective item writing is a skill that improves with training and practice, we encourage interested persons to learn about the issues a writer should consider. The NBRC offers resources through its website at www.nbrc.org. Within the recently reorganized Document Library, a prospective writer will find a link to an Item Writers Guide. A link called Summer Forum Workshops will take the reader to two recorded webinars. One describes production of multiple-choice items and the other describes simulation problem construction. People who would like to join the team that produces new examination content should start with these resources. This is a serious recommendation because trying to jump in without preparation is likely to lead to frustration on both sides.

After engaging in the learning resources in the NBRC's Document Library, those interested in producing new content for NBRC examinations can send the information described in Table 1 to item.writing@nbrc.org. Your information will be passed to an Examinations Coordinator who will follow up. Several months may pass before you are asked to write, so please be patient. New content is produced when needed to fit within the larger system of regular examination form turnover.

Summary

Becoming effective as a producer of examination content is like many other skills. Ineffective writing can lead to problems for the credentialing system from construct irrelevant variance. The system for taking in new examination content is organized to minimize such problems. The process for getting started as a content producer was described in this article.

Your questions are welcome

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. ■

Table 1. Information Required from New Writers

Writer's Name	First	Middle Initial	Last
Email address			
Phone			
Postal Address	City	State	Zip

Examinations for which I would like to write (Check all that apply)

☐ Therapist Multiple-Choice (CRT, RRT)
☐ Pulmonary Function Technologist (CPFT, RPFT)
☐ Clinical Simulation (RRT)
☐ Sleep Disorders Specialist (CRT-SDS, RRT-SDS)
☐ Neonatal / Pediatric Specialist (CRT-NPS, RRT-NPS)
☐ Adult Critical Care Specialist (RRT-ACCS)

General Counsel

Under the Microscope

by Anthony L. DeWitt, JD, RRT, FAARC

Karen Ray is a former journalism teacher who left a high school where she had been employed for three years because her principals made her life utterly miserable. They took away certain classes and gave them to other teachers that were younger and unqualified. She fought inside the system to keep her job but in the end took another one.

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.

After taking the new job, her old boss threatened to call her new boss if she didn't write a nice letter of resignation. She wrote it and then went to the State Commission on Human Rights and filed a charge of discrimination based on age and sex. That was in 2013. On May 9, 2016, the case finally went to a jury.

Because you will hopefully never have to file a lawsuit, or be a defendant in a lawsuit, you will likely never have to step foot inside a courtroom unless you're called as a juror. But if you ever do have to file a lawsuit, or should you ever get sued, it's important to recognize what happens in a hotly contested trial. Your entire life goes under the microscope.

Before you ever get to trial, your personal and private life will be dissected. You may feel like that frog you cut up in high school biology. You may be required to turn over Facebook messages, text messages, and emails that in any way relate to the subject matter of the case. You may be required in some instances to submit to a medical examination or allow your bank or phone records to be searched. You'll have to sit for a deposition (and sometimes two) and have your testimony taken under oath, answering all manner of tough questions.

In Ms. Ray's case, she had sent a text message to a former student with some language that could only be described as "salty." The defendant could not wait to put that up on the big screen before the jury. Nor could it restrain its glee at putting up the letter of resignation that thanked her harasser.

When it was her turn on the witness stand, she got to tell her story. Ms. Ray explained how she had been harassed and humiliated by her superiors. But when her direct examination ended, her real humiliation began. Cross examination was brutal and unrelenting. She had never sent an email that said she was being harassed. She never complained of harassment to her harasser. She complained about job actions but never specifically said it was because of age or sex. And then there was that nice letter of resignation.

Back and forth the questioning went, with the defendant calling her a liar, and her lawyer helping the jury understand that when you need a job, and you want to keep a new job, sometimes you say things in a letter of resignation that you might not otherwise say.

The defendant had it rougher than Ms. Ray. Teacher after teacher came in to tell how they had been bullied, harassed, and forced to retire by principals who were loud, physically intimidating, and mean. A teacher appeared by video and told how she had heard these principals set up their plan to clean out the "old dead wood."

Sadly, gender and age discrimination are not uncommon in today's world. They still happen in spite of laws to prevent it. But one overarching theme of Ms. Ray's case was that the harassment was known to be happening, and yet no one at the school board office took any action to remedy it until two years later when the harassing principal was allowed to "resign."

Employers should take note: just having an anti-discrimination policy is not enough if you do not monitor the environment and prevent harassment from occurring. A hostile work environment does not become hostile with one act, it becomes hostile with multiple acts, and if complaints are made, quick, effective investigation (if possible by an outside law firm) is the surest way to determine if there is a problem that needs to be addressed. Sometimes managers fear an outside investigation, but they should not. An outside investigator cannot be biased and is not affected by emotions or by the rumor mill in a hospital.

Most employees do not want to leave; they want to continue working. They just do not wish to be harassed into finding another job. Just because someone quits does not mean that a lawsuit can be avoided. Constructive discharge is a term used to connote a situation where an employer makes life so dark that an employee leaves. It is far better to document poor performance and behavior and discharge an employee honestly than to assign a 20-year veteran to the night shift to make them quit. Juries are not dumb; they understand that you're taking a shortcut.

Employees should take note that not every state has an effective anti-discrimination law and that federal law is very strict. Employment cases are difficult to pursue and even more difficult to win. They require good evidence of discriminatory intent, and better than 75% are dismissed or decided before ever going to a jury in federal court.

The fact is that a lawsuit is often not the best answer if you're unhappy at work and if your boss is making your life miserable. Often the best revenge is getting a better job and moving on — but please, don't tell my trial lawyer friends. ■

RESPIRATORY THERAPISTS REAL LIFE HEROES

CELEBRATE RC WEEK

OCTOBER 23–29

Prepare to celebrate Respiratory Care Week, a special time to increase awareness of the profession and to recognize RT heroes through fun & educational events in your facility and community.

VISIT c.aarc.org/go/rcwk2016
for OFFICIAL RC WEEK PRODUCTS

4 Sessions on How AARC Congress 2016 Can Boost Your Career

Session previews illustrate the value of the conference for RTs

AARC Congress 2016 will kick off in San Antonio, TX, on Saturday, Oct. 15, and the four-day conference promises to deliver the knowledge and information you need to treat your patients, run your departments, and educate your students in our increasingly complex health care environment. Here is just a small taste of the value-added programming awaiting you in the Alamo City this fall.


AARC
CONGRESS 2016

1 My Journey with Cystic Fibrosis

Mark Mangus, Sr., BSRC, RRT, RPFT, FAARC

Imagine you're an RT who treats kids who have CF. Imagine you become the parent of a child born with CF, a child who presents with the worst phenotype of the disease. Managing that child against the odds of failure to survive, much less thrive, draws on every bit of imagination and theoretical and practical knowledge that you possess, from acute care to critical care to home care to rehabilitation, and more — all combined with a lot of loving commitment to that child and that quest.

This is the odyssey that has been our life for 34 years and counting. Throughout our journey, we employed standard of care therapeutics and added to them "unconventional" and newly introduced interventions. We successfully navigated the complicated maze of physical, financial, and emotional issues to arrive at the most challenging events of our daughter's life: making her way through not one, but two double lung transplants.

Thanks to her tenacious spirit and sheer drive not only to survive, but to strive toward her life's goal to "leave her mark" on the world, Kimberly continues to inspire, working fervently toward achieving her goals with amazing grace and humility. Couple that with her somewhat cavalier and defiant attitude and very nose-to-the-grindstone self-management of her disease and post-transplant care needs, now, 13 years after her last transplant, Kim thrives 6 years into her career as a pediatric RRT.

Kim and I will chronicle our journey at the Congress. She will explain how she came to enter the respiratory care profession and her hopes and aspirations for the future. Our approach to interventions and management of her disease and the forces behind our choices will challenge attendees to think outside the box. Kim's story will not only convey what's possible in the face of potential disaster and futility, but how dogged determination can result in a life that inspires and challenges others to make the most of what they have and can be.

Mark Mangus is a retired pulmonary rehabilitation program coordinator from San Antonio, TX, who works as an independent chronic respiratory disease management consultant, lecturer, and COPD advocate.

2 The State of Tobacco & Nicotine Dependence

Frank T. Leone, MD, MS

Addiction to nicotine, with the resulting dependence on tobacco products, is a pervasive problem among patients in all health care settings. However, the social and physical consequences of this illness are often concentrated within the respiratory community. A majority of clinicians express a desire to do more to affect this epidemic, but the complexity of the problem and its potential impact on workflow limit their options.

Symposium participants will have an opportunity to explore various strategies for improving the effectiveness of simple tobacco dependence interventions and examine potential methods for more seamless integration of those interventions into their existing workflow. During the session we will review a number of topics designed to support the respiratory care specialist in achieving these goals, including the biological basis of the smoking behavior, core pharmacologic concepts, and the most common biases and cultural norms that affect tobacco treatment decision making.

By establishing smoking as the behavioral manifestation (cardinal sign) of a disturbance in brain biology rather than merely the exposure antecedent to much of the lung disease respiratory care professionals encounter, we can reframe reluctance to quit as the cardinal symptom of this pathology rather than a frustrating obstacle to progress. As a symposium participant, you will learn a simple, three-step approach to managing this natural reluctance and will be prepared to discuss available pharmacotherapeutic options for minimizing the compulsion to smoke. You will return to your work environment with a renewed energy and vision for how you might create change within your organization so that this terrible epidemic might one day be more effectively controlled.

Dr. Frank Leone serves as director of the comprehensive smoking treatment program at the University of Pennsylvania in Philadelphia, PA.

3 Treating Refractory Hypoxemia

Robert Kacmarek, PhD, RRT, FAARC

Refractory hypoxemia is an increasing problem facing all who work in the ICU. Despite advances in the care of the mechanically ventilated patient and the use of lung-protective ventilatory strategies, refractory hypoxemia in a complication of acute respiratory failure is a challenge for all critical care therapists.

This symposium will begin by addressing the issue of refractory hypoxemia from a number of directions. How do we optimize the application of ventilator support? Why, when, and how should we normally be adjusting the ventilator to ensure that refractory hypoxemia is unlikely to develop?

Following this presentation, the use of mechanical ventilation in what many consider an unconventional manner will be reviewed. Performing recruitment maneuvers followed by decremental PEEP trials, or the use of airway pressure release ventilation to manage our patients with refractory hypoxemia, will be addressed. We'll also take a look at the use of esophageal catheters to monitor the application of mechanical ventilation, along with the early use of muscle paralysis and prone positioning. Finally, the use of inhaled pulmonary vasodilators for the management of refractory hypoxemia will be discussed. This should be a lively and informative session for all therapists working in the ICU.

Dr. Robert Kacmarek is director of respiratory care at Massachusetts General Hospital in Boston, MA.

4 Indications of Cardiopulmonary Exercise Testing

Katrina Hynes, MHA, RRT, RPFT

Cardiopulmonary exercise testing (CPET) is a noninvasive simultaneous measurement of the cardiovascular, respiratory, and metabolic systems that assess a patient's exercise capacity, surgical risk, and breathlessness. The patient history and clinical indication are paramount to the type of CPET performed. It is imperative that the clinicians conducting the test understand the linkage between a well-designed quality control/ quality assurance (QC/QA) program, symptomatology, and the test performed to ensure quality data are collected. This affords the data to create the clinical picture and increases the likelihood of a successful diagnosis.

Today's clinicians are challenged not only to learn how to conduct a maximal test but also to understand expected behaviors of the data presented throughout an incremental protocol. A keen understanding of the quality metrics, as well as the appropriate physiological responses, will ensure accurate results that will be useful in determining a diagnosis and treatment plan.

This symposium will educate you on how to connect the dots in a fast-paced, complex patient care environment that is dependent on a well-designed QC/ QA system for the interdependent patient monitoring systems. The information provided will challenge your ability to evaluate symptoms, validate orders, follow through with essential quality assurance metrics, and understand the normal physiological response to exercise. In addition, this comprehensive overview will help you understand the nuances associated with CPET, the clinical assessments of therapeutic interventions, and the role of clinical trials.

Katrina Hynes is supervisor of the special pulmonary evaluation laboratory at the Mayo Clinic in Rochester, MN.

Watch for another round of Congress session previews in your next issue of *AARC Times*. Now is the time to make your plans to join your respiratory care colleagues from around the world for AARC Congress 2015, Oct. 15-18, in beautiful San Antonio, TX. ■

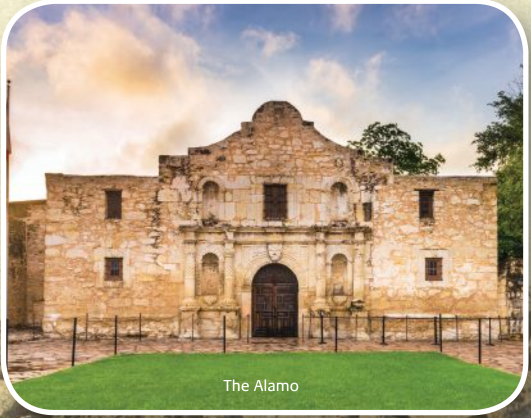
San Antonio's
Mission Trails

A trek down these historic roads offers a glimpse into the Alamo City's rich heritage during this year's Centennial Celebration of the U.S. National Park Service

We've all heard of the Alamo — the famous San Antonio mission where Davy Crocket, William Travis, Jim Bowie, and many other brave men came to an untimely end in a historic battle with Mexico's General Santa Anna during Texas' fight for independence.

But the Alamo is really just one of five missions established by Franciscan friars beginning in the 1700s to bring Christianity to the Native Americans of the region. Today these missions comprise the San Antonio Missions National Historical Park, making the Alamo City one of only a few urban areas with a national park within its city limits. While the Alamo is now a museum, the other four missions on the Mission Trails remain active parish churches, holding regular services throughout the year.

The best place to begin your journey through the park is at the visitor's center located adjacent to Mission San José y San Miguel de Aguayo,


The Alamo


Mission San Juan Capistrano

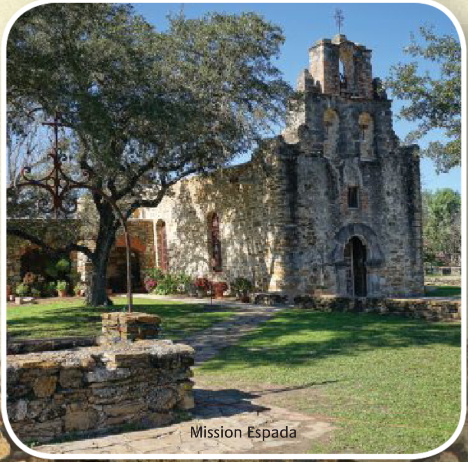
which is actually the second mission down the trails from the downtown area. There you'll find interactive displays covering the history of the missions, along with a theater showing an award-winning film on the mission era in San Antonio. After you've toured the museum, stroll along the brick walkways throughout the mission compound and visit the historic church, noting the famous "Rose Window," considered one of the finest pieces of Baroque architecture in the country. Mission San José also features a granary, Indian quarters, an immense quadrangle enclosure, and a restored gristmill housing an original horizontal water wheel. Known as the "Queen of the Missions," Mission San José was refurbished in the 1930s to celebrate the Texas Centennial.

From Mission San José, double back along the Mission Trails to experience Mission Nuestra Señora de la Purísma Concepción de Acuña, where you'll find one of the oldest unrestored stone churches in the country, complete with two massive towers featuring traces of brightly colored frescos. These eighteenth century frescos inside the friary include some of the same colors and have recently been brought back to life through a National Park Service paint conversation effort.

Next on the trail tour is the Mission San Juan Capistrano, which was actually moved to San Antonio from East Texas in 1731. The original compound has been well preserved and offers an authentic picture of the Spanish Colonial Mission plan. The original friary houses a museum featuring artifacts from the earliest days of the mission. Outside you can stroll down a designated nature trail that goes along a section of the original San Antonio River channel.

Mission San Jose

Mission Concepcion



Mission Espada

The final stop on the Mission Trails is the Mission San Francisco de la Espada, which was also relocated to San Antonio from an earlier site in East Texas in 1731. The original adobe church stood in ruins by the late 1770s, and the church onsite today was constructed around 1884. The Moorish-style arched doorway, however, dates back to about 1780.

On the way back up the Mission Trails, take time to visit one of the many parks or hiking/biking trails that dot the landscape. You might also want to stop at the Espada Aqueduct and Dam, both of which are still being used today. The dam is one of four Franciscan-designed dams placed on the San Antonio river in the 1700s and is a great example of an eighteenth century Spanish dam in the United States.

There is no charge to visit any of the missions, although donations are accepted. The park is open daily except for holidays. For more information, visit https://www.nps.gov/saan/planyourvisit/basicinfo.htm. And plan now to join your respiratory care colleagues in San Antonio for AARC Congress 2016, Oct. 15-18. See you there! ■

A Beautiful Little Girl

Arlene Zamora can't wait to see how Ivy Rose will lift hearts in the future

by Debbie Bunch

This year's AARC Photo of the Year Contest winner has found her niche in neonatal respiratory care.

Arlene D. Zamora's introduction to neonatal respiratory care can only be described as a "trial by fire." It was back in the mid-1980s, and the RRT-NPS was serving her first assignment as a military therapist at the Naval Hospital Balboa in San Diego, CA, after graduating from the Respiratory Specialist Program at Brooke Army Medical School in Fort Sam Houston, TX.

"I was working in the adult medical intensive care unit when I was approached by my supervisor," she recalls now. "He directed me to 'go to the NICU and start inverse-ratio ventilation on a baby with PPHN.' My response, was, 'what's a NICU?'"

A day that changed her life

With zero experience in neonatal care, Zamora says she would have preferred to decline the assignment. However, that wasn't an option in the U.S. Navy. So she headed to the NICU to see what awaited her.

"Off I marched, so nervous I could barely speak," says the AARC member and 2016 winner of the AARC Photo of the Year Contest. "After showing me how to wash my hands, the neonatologist wanted to start making changes immediately. He wanted to know how the changes affected tidal volume." But reporting tidal volume wasn't enough — he also wanted the expired tidal volume to be expressed in mls/kg.

For a respiratory therapist who had only learned what a NICU was a few moments before, it was daunting, but Zamora forged ahead. Together she and the physician cared for the infant, and by the end of her shift, she really thought she was getting the hang of it. "I found myself quickly making ventilator changes, reporting the volumes, and giving him directions on which changes were detrimental," she says. "That day taught me I could handle pressure, that I knew more than I thought, and that my skills as a respiratory therapist have an impact on patients."

She felt like she earned the respect of the entire NICU team as well, a fact that was borne out by a comment made by the neonatologist himself. "He requested that I no longer refer to him as 'captain' while in the NICU, but could use his first name," she says. "I cannot tell you how honored I felt."

Preparing new RTs

Zamora says that initial experience in the NICU at the Navy hospital set the stage for the rest of her 30+ years in the profession, turning her into the kind of therapist who always makes sure the "i's" are dotted and the "t's" are crossed when caring for her tiny patients. "I love the fact that you have to be so precise," she says. "Words like 'kind of,' and 'around,' and 'about,' are never used in the NICU."

Now the lead clinical coordinator for respiratory care in the NICU at Alfred I. duPont Hospital for Children in Wilmington, DE, she is responsible for teaching new therapists the same level of precision. Even after 30 years, she hasn't forgotten how scary that first day in an environment with fragile infants can be and she tries to challenge those therapists — and the students who come through the unit as well — the same way she was challenged all those years ago. "I strive to challenge new therapists and students to perform beyond their own expectations," she says. "To show them we are best when under pressure."

The hardest part of the job is dealing with the loss that is inevitable when caring for such small infants. "We are not just striving to give each patient the very best outcome, we share every little triumph and setback with parents. That's why loss is so heartbreaking," she says. The biggest rewards come when the babies they have cared for come back for a visit. "It is almost unbelievable the growth and progress we see," says Zamora, "not just with the baby but with the whole family."

Glad to be part of the team

That's certainly been the case with the little girl pictured with Zamora on this month's cover. Ivy Rose Kuehne was just eight weeks old when the winning photo was taken in August of 2015. "I had always wanted to send in a photo for this contest," says the therapist. "It just so happened that Bugaroo Moments Photography for Preemie Prints was finishing up a free photo shoot when it was time for Ivy's routine trach change. I thought this was a perfect time to catch a therapist interacting with her patient." Ivy's mom, Ellen, loved the idea, and so did volunteer photographer Sarah Boujais, who was happy to hang around a little longer to get just the right shot.

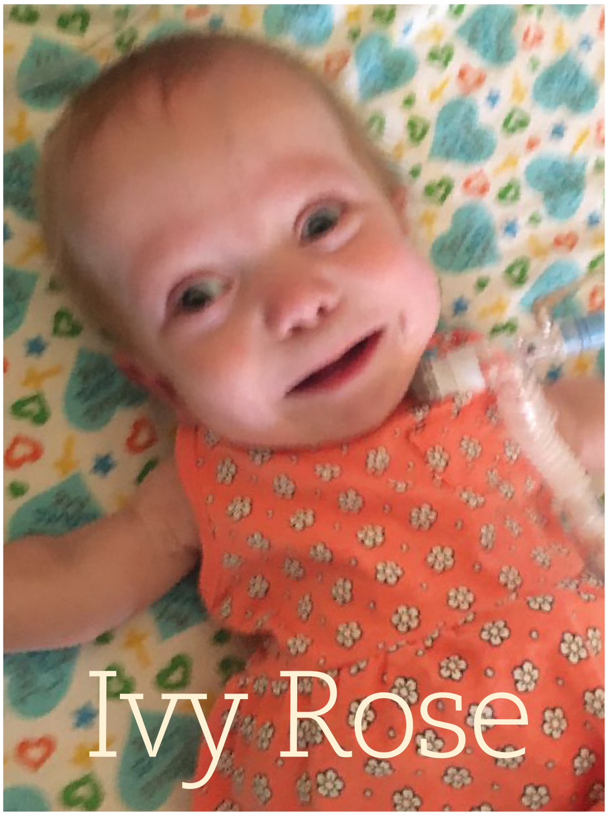
Diagnosed with a rare form of dwarfism or skeletal dysplasia known as spondyloepiphyseal dysplasia congenital (Bill Klein and Dr. Jennifer Arnold from TLC's "The Little Couple" have this same condition), along with associated pulmonary hypoplasia and pulmonary hypertension, Ivy came to A.I. duPont for the expertise of Michael B. Bober, MD, a pediatric geneticist and director of the Nemours Skeletal Dysplasia Program. Ivy required extensive care in the NICU and Zamora says she feels fortunate to have been a part of the team that managed her ventilation and airway until she could receive a tracheotomy. Following placement of the trach and a g-tube/fundoplication, Zamora was also involved in educating the family on everything from suctioning and hand bagging to trach care/changes, home ventilation, and handling emergency situations.

Ivy's mom, Ellen, was a pro from the very beginning, says Zamora. "She was able to be with Ivy every day as she was staying at our Ronald McDonald House." Training proved more challenging with Ivy's dad, as he could only occasionally visit from their home in Ohio, but she says when he was able to come, he focused on learning as much as he could in the time allowed.

The training and hospitalization all paid off for little Ivy Rose. After four months at A.I. duPont and ten months of hospitalization altogether, she was finally able to go home to Ohio where Zamora says she is thriving. "She loves watching Elmo, snuggling with Mommy and Daddy, and giving high fives," says the therapist. She and her colleagues in the NICU have been keeping up with the little girl through her mom's Facebook posts, but as of this writing in early summer, she was scheduled for a return visit soon, and Zamora was looking forward to seeing her in person. "I can't wait to see how Ivy is going to lift our hearts in the future."

It's all about Ivy

Arlene Zamora says having her photo win this year's AARC Photo of the Year Contest means much more to her than just the free one-year AARC membership renewal and magazine cover she received. "I wanted to show how a little girl that may be perceived as 'challenged' can inspire and encourage so many," she says. "I am so humbled that my friends and colleagues appreciated the impact of this beautiful little girl." ■



There's No Place Like Home

CAPE program delivers clinicians to kids

by Debbie Bunch

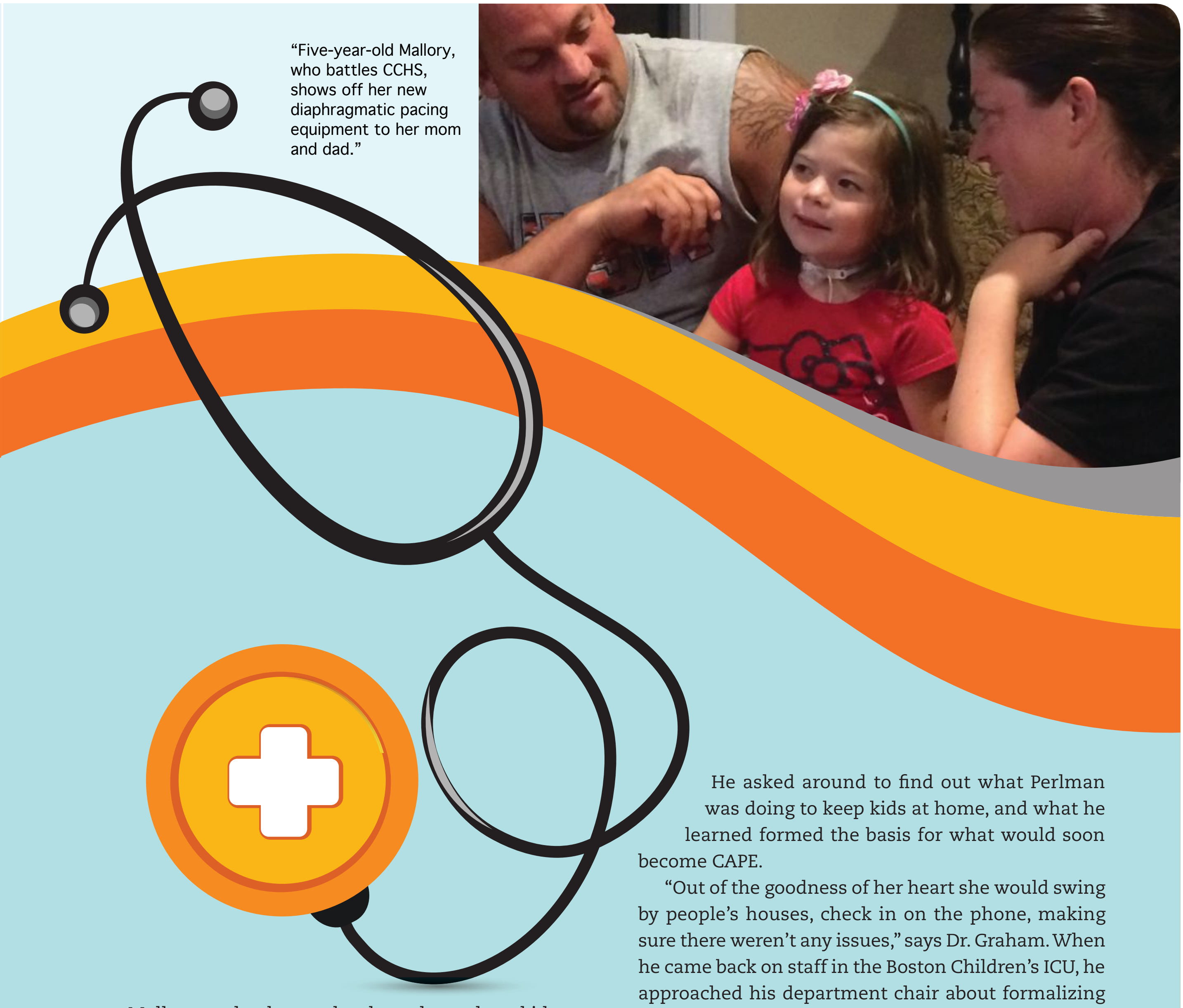
Five-year-old Mallory was born with congenital central hypoventilation syndrome (CCHS). Also known as Ondine's Curse, the condition causes a person to take shallow breaths, particularly during sleep. A shortage of oxygen and buildup of carbon dioxide ensues, but the autonomic nervous system does not stimulate the patient to breathe more deeply or wake up to correct the situation. Mallory has been living with CCHS her whole life. She has a trach and a mechanical ventilator to ensure she keeps breathing, and her parents have to remain vigilant around the clock, looking for changes in her condition.

Families with children like Mallory, who rely on sophisticated medical technology to stay alive, face an unfathomable array of challenges. Medical equipment must be brought into the home and maintained. Parents must learn to be doctor, nurse, and respiratory therapist all rolled into one. Someone has to be on duty at all times.

The prospect of taking the child to medical appointments can be daunting. Extensive preparations must go into the trip — loading equipment into the car, ensuring the child has all the devices and medications that may be needed while away from home, and planning for medical emergencies along the way. Once the child does arrive in the physician's office, the physician may not be seeing a true representation of the child's condition because of the upheaval that has occurred just to get there.

Enter the Critical Care, Anesthesia, Perioperative, Extension, and Home Ventilation (CAPE) program run out of Boston Children's Hospital in Massachusetts. Through this home-based program,

All children deserve to be raised in their own homes — even those with complex medical needs. AARC member Lauren Perlman and her colleagues at Boston Children's Hospital are making sure more of them get the chance to do just that.



"Five-year-old Mallory, who battles CCHS, shows off her new diaphragmatic pacing equipment to her mom and dad."

Mallory and other technology-dependent kids are being seen for medical check-ups and other visits in the comfort of their own homes. And to a large extent, they have Lauren Perlman, RRT, to thank for it.

The goodness of her heart

Robert Graham, MD, who founded the program along with Perlman back in 2007, explains her significance to the effort. "I had worked with Lauren during my residency and fellowship, so I got to know her a little bit there and knew she worked with kids with chronic respiratory needs." When he continued his training at a local rehabilitation hospital, he quickly realized that kids who went home from there would often just bounce back to the ICU or rehab. He asked around to find out what Perlman was doing to keep kids at home, and what he learned formed the basis for what would soon become CAPE.

"Out of the goodness of her heart she would swing by people's houses, check in on the phone, making sure there weren't any issues," says Dr. Graham. When he came back on staff in the Boston Children's ICU, he approached his department chair about formalizing those efforts into an official program that would serve medically fragile kids. "I said I knew Lauren was doing this on the side, they said sure, and we just sort of took off from there."

Today Dr. Graham and Perlman, along with other members of the health care team, visit about 25 patients in their homes every month. "Our patients have a variety of different diagnoses such as neuromuscular, neurological, genetic, and chronic lung disorders," says Perlman, an AARC member. "These may be associated with a congenital heart problem or prematurity." Her time during the visit is spent examining the home respiratory equipment and supplies and making sure all of the safety equipment is in order. She also ensures that parents and other

Lauren Perlman, left, joins Maria Santos on an outing to a local skating rink with 12-year-old Bryan, who suffers from merosin-deficient muscular dystrophy."

caregivers are up to speed on operating all of the equipment necessary to care for the child at home. She works with the physician to interpret end tidal carbon dioxide, tidal volume, and other respiratory parameters. If the child has a tracheostomy, the trach site is examined and progress on weaning off the ventilator is assessed for kids who are able to wean.

Perlman and the team see most of the kids in the CAPE program every six months, although those who are weaning from the ventilator or are considered more medically fragile will be seen more often, as will infants. Some of the follow-up care occurs during phone calls.

She just engages them

Perlman says she first started visiting kids in their homes and following up with parents on the phone out of a desire to make sure these families had what they needed to keep their kids at home. "Prior to the formal development of CAPE, I was a supervisor in the respiratory care department with a special interest in helping our families take their children home with continued respiratory support — more specifically a ventilator with tracheostomy tube," she says. "The home ventilators were becoming more advanced, and our families needed continued support to learn to care for the children and learn what was needed to keep them at home."

Teaching families and caregivers to deal with that equipment is a big part of Perlman's job through CAPE, and Dr. Graham says it's one of the most important roles she plays in the program. "The amount of time Lauren spends training families and neighbors and everyone else is phenomenal," says the physician. "When she does training, she clicks into an entirely different mode — a teacher mode — parents are transfixed. She just engages them." She also serves as a great resource for troubleshooting, set up, and finding ways to make life easier for the families involved. "She keeps up with the new devices that come out — if there is some nuance we can adapt for our kids," says the physician.

Part of the equation is assessing the home situation, too. Perlman emphasizes that CAPE sees kids in a wide variety of living conditions. "Some of our families are fortunate to have financial support in which they can afford to have specialized lifts, for example, to get those in wheelchairs throughout the home and even in a vehicle that can accommodate the chair," she says. "Others are living in subsidized housing due to a variety of circumstances and may be on the second or third floor and need to carry their child up and down stairs."

While families do have help in the form of home nursing, in many cases, one parent must quit their job to stay home with the child full time. "There are supports in the home such as nursing help, but the parent ultimately is responsible and always 'on duty,'" explains Perlman. Having CAPE come out and conduct check-ups and other visits is invaluable, and Perlman says the families are extremely appreciative of the support. "We have received amazing feedback," she says. "Not having to bring the child in for a comprehensive visit is invaluable to our families."

The home visits allow the clinicians significantly more time with each child as well. What may have been a 15-minute visit in the office can often stretch to an hour at home as Perlman and her colleagues assess patients in a setting they are familiar with, check home equipment, and conduct educational sessions. "Children are best seen in their own environment where they are most comfortable," emphasizes the therapist. "Those that are seen after a car ride in a snowsuit are just not being seen in their normal condition. For example, they may work harder to breathe."

The support of this program can extend far beyond respiratory needs as well. CAPE often provides advice for a multitude of systems and works closely with other providers caring for the children, such as orthopedics, otolaryngology, and nutrition.

The respiratory therapist role is essential

According to Dr. Graham, the RT's role is essential for a program like CAPE. "Lauren is an amazing person, and in that respect, she is irreplaceable," he says. "But the final common pathway for all of our kids is respiratory support. That's something most community providers are not comfortable with." When kids with problems like those seen in the CAPE program go to a community hospital, clinicians often "freak out," says the physician. "They aren't going to have a cough-assist device and whatever else they need." Their goal is simply to transfer the child to a children's hospital that can handle the case as soon as possible.

Having an RT visit these children in their homes precludes many of those respiratory-related ER visits. Unfortunately, RTs are not reimbursed outside of the hospital setting, and Dr. Graham believes that is a problem that should be rectified. "As I work with the insurance companies and hospitals, getting reimbursement for the RT is critical," he emphasizes. "The stuff she does that we can't bill for shortens hospital stays. From my perspective, it's money in the bank."

The CAPE program itself is not in jeopardy — "Fortunately, my department chair sees the big picture . . . we just pay for her," says Dr. Graham — but setting up similar programs in other areas will be an uphill battle without reimbursement for an RT. "When I talk to them, they say, we can't do this without reimbursement." Solving that problem will take some major changes in reimbursement policies (such as those supported by the AARC through the Medicare Telehealth Parity Act), but in the meantime, life goes on at CAPE and Dr. Graham, Perlman, and their colleagues will continue to see children at home who need their services.

A labor of love

It's a labor of love for them and one they'd like to extend even further. "It is challenging not to be able to do more for our families and also difficult to acknowledge that some are able to navigate the systems in place for support better than others," says Perlman. "It should be about the child's needs but that is not always the case." Many of the children are also becoming young adults, and she would like to see more accommodations made for them so they can live on their own, but right now services are lacking.

The rewards she finds in giving kids the ability to remain at home where they can play with their siblings and household pets and just enjoy being kids can't be underestimated. "That's what it is all about," says the therapist. She believes the little girl we introduced you to at the beginning of this story — who Perlman calls "my Mallory" — is a great example. After being treated with mechanical ventilation for her CCHS for five years, she recently had diaphragmatic pacemakers placed, which means that someday soon she will no longer have to rely on a vent attached to a trach tube to breathe during sleep. "She'll just strap on her battery pack and flip the switches on!"

It is these moments that make all the home visits and late night phone calls worthwhile. "Her wish is to swim under water," says Perlman, and she, for one, would not rule that out as a possibility. ■

"Dr. Robert Graham takes a few moments out of a visit to play with 9-month-old Ursula, who has chronic lung disease from prematurity."

My Not So Terrible “Terrible Two”

by Erin Newton

CAPE is helping Colin live a full life, despite congenital myopathy.

Colin’s big sisters always have his back.

Caring for Colin is a 24/7 job, but the family still finds time for fun activities.

Bedtime means BiPap for this little guy.

Lauren Perlman, left, spends lots of quality time with Colin and his family during her visits.

“Terrible two” is not a phrase that is uttered in our house. For our family and our son, Colin, age two, is thriving. Two is reading Brown Bear, Brown Bear to big sisters. Two is counting to 10 and smiling with pride. Two is butt-scooting across the kitchen floor to pull the cat’s tail. Two is splashing in the pool and playing choo-choos with cousins. Two is making plans for preschool. Two is saying, “I love you.”

Yet, in our home, Two is also living every day with the shadow of a rare, incurable, and life-threatening disease trailing behind. Two is saying “Mama, uh-oh” when a feeding pump disconnects. Two is pointing to your nose when you need deep nasal suctioning. Two is big sisters who sing and dance to make breathing treatments more entertaining. Two is sleeping every night in a crib while wearing BiPap and a pulse oximeter.

During the first year of his life with congenital myopathy, Colin lived in the ICU and ICP for 107 days, and spent another six months at home on hospice care. He fought through respiratory failure and viruses, collapsed lungs, kidney and bladder stones, and a host of other medical conditions that would debilitate a strong adult. Quite simply, if Colin was not fighting for his life as an inpatient at Boston Children’s Hospital (BCH), he was a frequent flyer getting ready for his next unexpected admission to the facility on Longwood Avenue.

During the second year of our son’s life, Colin spent zero nights in the hospital for illnesses. Zero.

Colin is not a miracle. He is not cured. He is a patient of the Boston Children’s Hospital CAPE program. Being a patient in this one-of-a-kind program has not only saved our son’s life and our family, but it has given us the confidence and ability to care for our son at home. Dr. Robert Graham and RT Lauren Perlman were the first medical professionals who helped us believe that our son could have a life outside of the hospital’s walls, and they, along with Dr. David Casavant and Julie Shurtleff, RN, CPNP, have supported us for the last two years, ensuring that Colin’s life is full outside of BCH.

From guiding our set-up as a medical home to troubleshooting breathing issues in the middle of the night to coordinating care with Colin’s many other BCH specialists, the CAPE program extends compassionate medical care that goes beyond what seems humanly possible. Whereas other doctors are hurried to finish a 15-minute well visit, the members of the CAPE program take their time with Colin, applauding his latest developments and responding to his medical crises. As a result of the care and support that the CAPE program provides, instead of spending this last year in the hospital, Colin spent it with his family and friends — celebrating birthdays and holidays, skiing in the mountains, splashing in the ocean, boating to an island, swimming in a pool, swinging on his swings, and living a very full life.

Early in our journey of caring for our medically complex child, Dr. Graham gave us some advice. He told us to look beyond the medical equipment and see the child. Because the CAPE team of medical professionals cares for the whole child and not just the disease or medical equipment that follows him, everyone around us is able to see Colin for Colin — a funny, social, sweet, vocal, and thriving Two-year-old boy. ■

Erin Newton is the mother of Colin, a not so terrible “terrible two” living at home with his parents and siblings in Wayland, MA.

RC Currents

IN THE NEWS

TRANSITIONS

Association Mourns the Loss of AARC Director at Large, **Bill Lamb**, BS, RRT, FAARC

The AARC lost a tireless volunteer for the profession with the recent passing of Bill Lamb, BS, RRT, FAARC. A member of the Association since 1982, he was actively involved in a wide array of AARC initiatives, serving both the Missouri Society for Respiratory Care and the national organization. He may be best remembered for his work with the AARC House of Delegates, where he was a delegate for many years and was Speaker of the House in 2012. He was elected to the AARC Board of Directors in 2013 and was serving his term as a Director at Large at the time of his passing.

"Bill's dedication as a volunteer and advocate for our patients and profession has left an indelible mark on me," says AARC President Frank Salvatore, MBA, RRT, FAARC. "I, as well as many others, have truly been touched by this man's life."

Lamb joined the profession in 1979 when he enrolled in the respiratory therapy program at Saint Louis Community College at Forest Park in Missouri. Later, he earned his bachelor's degree in business and management from National Louis University in Illinois. He served as administrative director of respiratory care, pulmonology, and The Asthma Center for Children at Cardinal Glennon Children's Hospital in St. Louis. At the time of his death, he was the national clinical manager for Ohio Medical Corporation.

Bill Lamb was passionate about making sure patients had access to respiratory therapists; he spent many years working on state and national initiatives focused on that area. He leaves an honorable legacy of mentoring many new leaders into the respiratory care profession. ■

AARC Times Is Looking for Student Member Stories To Publish

We're always looking for stories from AARC student members that relate special experiences and share the RT student perspective on the respiratory care profession.

If you have a good story to tell, please contact *AARC Times* Editor Marsha Cathcart at cathcart@aarc.org and include in the subject line, "Student Member Story." When you send your story, be sure to give us your full name, AARC member number, a brief description of the topic you've chosen, and why you would like to have your story published. We hope to hear from you soon! ■

Telemedicine Has a Long Way to Go in Rural Areas

Telemedicine is being touted as a way to bring more care to people in rural areas of the country. However, while telemedicine visits for Medicare patients living in rural areas have increased 28% per year over the past decade, researchers from Harvard Medical School find telemedicine is still scarce in these areas.

In a review that involved a 20% random sample of Medicare claims for traditional Medicare beneficiaries from 2004-2013, they found only 0.7% of rural beneficiaries had received a telemedicine visit in 2013. Most of the visits occurred in outpatient clinics and 79% were related to mental health conditions. They also found that rural beneficiaries who received a 2013 telemedicine visit were more likely to be younger than 65 years, have entered Medicare due to disability, have more illnesses, and live in a poorer community compared with those who did not receive a telemedicine visit. The Harvard study was published in a recent edition of *JAMA*.

Why isn't telemedicine being used on a wider scale in rural areas? The investigators believe reimbursement issues inherent in traditional Medicare are a big part of the problem and that those problems could be solved by legislation that has been introduced into Congress to expand the availability of telehealth services.

The AARC is advocating for passage of H.R. 2948, the Medicare Telehealth Parity Act. The legislation would include respiratory therapists as covered providers for patients with certain chronic respiratory conditions like COPD, greatly expanding their access to patient education services that could help them avoid hospital admissions. ■

New White Paper Will Help Improve Ventilator Care

A white paper published by the AARC and the University HealthSystem Consortium (UHC) aims to improve the safe initiation and management of mechanical ventilation. "The UHC represents major academic medical centers across the country, and thus has a huge influence on policies," says AARC President Frank Salvatore. "The AARC was pleased to be invited to work on this major new initiative to improve ventilator care."

The white paper, which grew out of reports that around 9% of all safety intelligence data show changes to mechanical ventilator settings were made by clinicians with no competency training in ventilator use, specifically outlines the factors involved in safe mechanical ventilation and defines the competency, training, and interdisciplinary approach required to improve outcomes. The white paper will be presented at the UHC Respiratory Care meeting at AARC Congress 2016 in San Antonio, Oct. 15-18.

Noting the lack of resources for respiratory therapy departments to use to develop ventilator safety policies, AARC President Frank Salvatore says respiratory therapists everywhere will benefit from this much-needed resource. "The increased focus on safe ventilator initiation and management that will result from the publication of this white paper will help ensure more facilities take a hard look at the competencies held by clinicians who are allowed to manage mechanical ventilation. As the most well-trained clinicians in ventilator care, that bodes well for RTs, and most importantly, the ventilator patients who rely on their care." ■

STUDENT CORNER

Work, School, Life: Can There Be a Balance?

By MaryBeth Cregger, MS, RRT

Every fall an influx of brand new respiratory therapy students walks through the classroom door. We can see it on your faces: fear, anticipation, self-doubt, and excitement! There are many questions and concerns that can usually be worked through pretty quickly — until the real work begins. As you learn about air entrainment ratios, anti-cholinergic medications, Poiseuille's law, and the alveolar air equation, it is all you can manage. Your mind is blown!

The coursework is challenging; *it is supposed to be*. The amount of time you need to commit to studying is extensive; *it is supposed to be*. Balancing children, spouses, work, social lives, and personal problems may seem impossible. To help my students handle it all, I tell them three things:

1. Organize yourself. Determine how you learn best, structure your class materials in a way that makes sense to you. Studying can be overwhelming, so set goals. Structure your time to include things you enjoy.

2. Find yourself. This program will challenge you in ways you did not think possible. Watching yourself rise above and achieve your goals will give you a whole new outlook on those things you are trying to balance. You will learn who you really are and quite possibly amaze yourself!

3. And finally, ask for help. I have been where you are and have had many of the same feelings. Your instructors have also been where you are. We understand. *Talk to us.* We can connect you to resources and give you advice. We all want you to succeed, and we know you can!

AARC member MaryBeth Cregger serves as director of clinical education for the RT program at Illinois Central College in Peoria, IL. ■

AARC Supports Legislation To Delay Medicare Competitive Bid Rollout

Respiratory therapists who provide home care services to Medicare beneficiaries have raised serious concerns about the impending rollout of the Medicare Competitive Bid Program in rural and other non-compete areas of the country. Under the current plan, RTs fear many patients would be left without access to the respiratory-related durable medical equipment (DME) they need to manage their chronic respiratory conditions at home.

Senators Heidi Heitkamp (D-ND) and John Thune (R-SD) and Representative Tom Price (R-GA) have introduced legislation into their respective houses of Congress that would delay the rollout of the bid program in rural and other non-compete areas until Sept. 30, 2017. The AARC has applauded their efforts in letters to them and explained the role of the RT in caring for home care patients. "The AARC and our members are very much aware of the struggles many of our pulmonary home care patients are having in receiving the full range of Medicare services, in particular respiratory-related DME for which they are eligible and which they desperately need," says AARC President Frank Salvatore. He notes that the temporary delay afforded by the legislation would give the government the time it needs to assess the impact on Medicare patients of the significant revisions to the reimbursement structure under the DME Competitive Bid Program.

The letters that went out to Senator Heitkamp, Senator Thune, and Representative Price represent just one recent example of the AARC's continuing commitment to stay one step ahead of legislation on Capitol Hill with the potential to impact the respiratory care profession and, most importantly, the home care patients who rely on care provided by respiratory therapists. ■

Grace Anne Dorney Koppel Named COPD Foundation President

Grace Anne Dorney Koppel inspired attendees at AARC Congress 2011 with her story of resilience in the face of COPD.

Long-time COPD patient advocate Grace Anne Dorney Koppel took over the reins of the COPD Foundation in May when she was named president of the organization. Dorney Koppel succeeds COPD Foundation Founder and Alpha-1 Patient John Walsh, who is recovering from an illness. Craig Kephart, who had been serving as acting president, has been named chief executive officer.

"In addition to having a long history of patient advocacy, Grace Anne is a proven leader ready to tackle the issues facing the 30 million Americans affected by COPD," says COPD Foundation Board of Directors Chair Byron Thomashow, MD. "I am confident that with Grace Anne and Craig at the helm, the COPD Foundation will continue to build on the legacy started by Founder John Walsh over a decade ago."

Grace Anne Dorney Koppel is a practicing attorney and business manager for her husband, former *Nightline* anchor Ted Koppel. Diagnosed with COPD in 2001, she has been actively advocating for the COPD cause since January of 2006, when she became the national spokeswoman for the National Heart, Lung, and Blood Institute's campaign to increase awareness of COPD.

She has taken the COPD message to programs ranging from the *CBS Evening News* and *Good Morning America* to *The View* and other major media outlets. "No goal is more urgent than the development of a cure for COPD, but until such time, we have two interim goals that require the nation's immediate attention and support: identifying the 12 to 15 million Americans who have COPD but don't yet know it, and conveying to the overall population of 30 million COPD patients in America that it is still possible to continue living a useful and productive life until we find better treatments and a cure," says Dorney Koppel. "Ours is a misunderstood and under-acknowledged disease. To the best of my abilities, I hope to bring COPD out from the shadows into the light of understanding and support, which we desperately need."

She was the keynote speaker at AARC Congress 2011 and has worked closely with the AARC over the years on COPD advocacy issues. ■

Is It COPD?

University of Michigan researchers who examined spirometry results and respiratory symptoms among 2,700 people found a history of smoking raised the risk for symptoms even when spirometry results were normal. About half of these current or former smokers reported symptoms similar to those seen in COPD patients, such as shortness of breath, coughing, and difficulty exercising, and they also sought medical attention for flare ups of these symptoms at about the same rate as do people with COPD.

The investigators will now lead a new trial supported by the National Institutes of Health to study the use of a bronchodilator medication in this patient population in an attempt to provide guidance on treatment. They believe more research is also needed to determine whether these individuals actually have an early form of COPD that will ultimately lead to airway obstruction or whether they will continue to have normal spirometry results despite their symptoms.

The current study appeared in a recent edition of the *New England Journal of Medicine*. ■

Georgia RT Students Raise Awareness of Cystic Fibrosis

Logan Price (center), a CF patient, holds the check donated in his name to the CF Foundation by RT students from Middle Georgia State University.

RT students typically do all they can to keep up with their coursework and clinicals. Students from Middle Georgia State University carved time out for one more thing during their 2015-2016 semesters: spreading awareness of cystic fibrosis. The inspiration for their efforts came last August, when the RT student organization, dubbed the Middle Georgia Respiratory Education Action Team (MGREAT), got the chance to learn more about CF from a young man who's been living with the disease his whole life.

Sixteen-year-old Logan Price so moved the students that they decided to begin a fundraising event that went on for most of the school year. AARC member Hunter Jackson, a sophomore in the RT program, got the ball rolling by proposing that the group design and sell a special t-shirt, with proceeds going directly to the Cystic Fibrosis Foundation. They found sponsors to help pay the costs of printing the shirts — which bear an image of boxing gloves and the slogan "Knock out Cystic Fibrosis" on the front, and the words "Logan's Heroes" on the back — and MGREAT members offered the shirts for sale on campus. By the end of April, they had raised $3,339, which they donated to the CF Foundation in Logan's name.

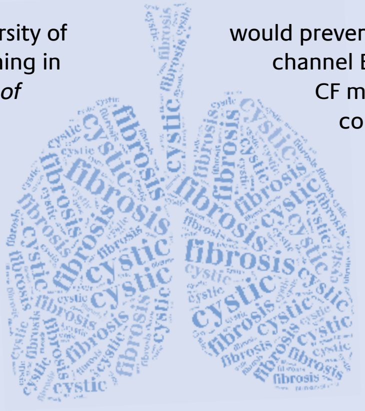
Logan joined the students again on April 20 for an update on the success of the project. Teri Miller, MEd, RRT, CPFT, chair of the RT department, told him how much he meant to her students, "Your story has really made a difference — you've inspired them"

MGREAT advisor and AARC member Beth Brown, MS, RRT, a professor in the program, echoed those sentiments. "These students will be working with CF patients," she said. "It's good to put a face with it."

As for Logan, he just stood back, looking over the sea of students wearing the "Logan's Heroes" shirts, and said, "It's great. I feel great." ■

New Hope for People with Cystic Fibrosis

Working with colleagues at the University of North Carolina, Irish investigators publishing in a recent edition of the *American Journal of Respiratory and Critical Care Medicine* have discovered a new molecule that may one day help treat people with CF. The molecule works by altering cellular ion channels in a way that results in improved airway hydration and significantly increased mucus clearance. The researchers specifically hope to be able to develop a novel protease inhibitor that would prevent activation of the epithelial sodium channel ENaC. Because ENaC is independent of CF mutations, they believe the discovery could help everyone with the disease.



"This strategy could prevent the significant lung damage that results from chronic cycles of infection and inflammation, with potential impact on quality of life as well as life expectancy," study author Dr. Lorraine Martin was quoted as saying. ■

Pediatrics Study:
E-Cigarettes Put Small Children at Risk

A review of National Poison Data System data shows that calls to poison control centers related to the ingestion of e-cigarette components by children under the age of six have skyrocketed. Between January 2012 and April 2015 the number of calls rose from 14 to 223 — an increase of 1492.9% — and 14.2% of all calls during that time period were related to the nicotine delivery devices.

Children under two accounted for 44.1% of e-cigarette exposures and all kids with these exposures were 5.2 times more likely to be admitted to a health care facility. While symptoms resolved within a few hours in most kids, exposed children were still 2.6 times more likely to have a severe outcome than those with exposure to regular tobacco products. One death was also recorded.

The study's authors call for "public education; appropriate product storage and use away from children; warning labels; and modifications of e-cigarette devices, e-liquid, and e-liquid containers and packaging to make them less appealing and less accessible to children." The study was published in the May online issue of *Pediatrics*. ■

Swaddling Linked to SIDS

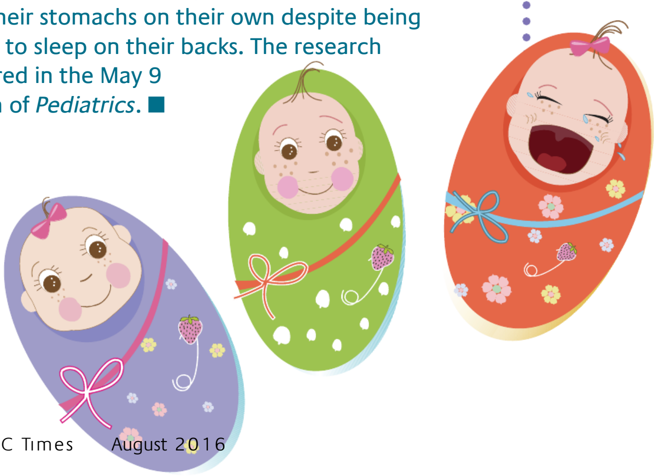
New parents are typically advised to swaddle their infants to help them feel warm and cozy during sleep. University of Virginia researchers who reviewed four previous studies on sudden infant death syndrome (SIDS) believe that might not be a good idea.

Their results showed infants who succumbed to SIDS were 50-60% more likely to have been swaddled. When swaddled infants were placed to sleep on their stomachs the risk of SIDS was even higher — they were about 13 times more likely to die — and the risk increased as the infants got older and were more likely to be able to roll over onto their stomachs on their own despite being placed to sleep on their backs. The research appeared in the May 9 edition of *Pediatrics*. ■

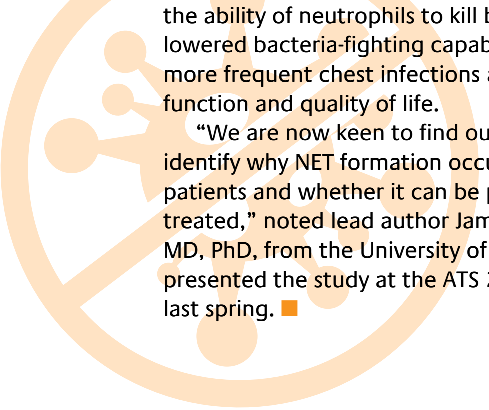
Screening Patients for Sleep Problems Could Cut Down on Rapid Response Events

Rapid response teams, many of which include an RT as a member, are employed to help ensure patients who are in trouble don't end up in the ICU. A new study suggests many of those patients may be suffering from undiagnosed or untreated sleep apnea.

Using a validated questionnaire for sleep disordered breathing (SDB), researchers from Thomas Jefferson University screened 2,590 obese patients admitted to the internal medicine, family medicine, and cardiology services at their hospital. Seventy-six percent of the patients were deemed at high risk for SDB and these patients were more likely to experience a rapid response event than low-risk patients. All of the high-risk patients underwent a comprehensive sleep evaluation and were offered treatment with positive airway pressure therapy. Among those who were compliant with the therapy, fewer rapid response events were seen. The study was published in *PLOS ONE* in May. ■



Blame It on the Neutrophils



Neutrophils are supposed to fight infection, but new research suggests they aren't getting the job done in some patients with COPD. The finding could lead to new and better treatments for people with this form of the disease.

In a study conducted among 141 patients with stable COPD, researchers from Scotland found that a recently identified form of neutrophil behavior called neutrophil extracellular trap (NET) formation weakens the ability of neutrophils to kill bacteria. This lowered bacteria-fighting capability results in more frequent chest infections and worse lung function and quality of life.

"We are now keen to find out if we can identify why NET formation occurs in these patients and whether it can be prevented or treated," noted lead author James D. Chalmers, MD, PhD, from the University of Dundee. They presented the study at the ATS 2016 meeting last spring. ■

Pulmonary Arterial Hypertension Treatment on the Horizon

New research suggests people with pulmonary arterial hypertension (PAH) may one day be treated with an aerosolized form of gene therapy. International investigators who tested the therapy in a pig model of PAH found it halted progression of the disease. The gene, SERCA2a, regulates intracellular calcium in vascular cells and prevents them from proliferating in the vessel wall. It was delivered into the pig lungs through a harmless adeno-associated virus. Pigs who received the treatment saw significant improvements in heart and lung function; also, abnormal cellular changes causing PAH were reduced.

"I'm excited that there is a potential new treatment for patients with this deadly disease," noted study author Roger J. Hajjar, MD, from the Icahn School of Medicine at Mount Sinai. "By tailoring the gene therapy, it looks like we can halt the proliferation of smooth muscle cells in the blood vessels. This should help restore function and improve survival in human patients."

The investigators published their results in a recent edition of the *Journal of the American College of Cardiology*. ■

Strange But True...

Watercress, anyone? Pittsburgh researchers have found that an extract taken from watercress can inhibit the activation of a tobacco-derived carcinogen in people who smoke. It works best in those who lack certain genes involved in processing carcinogens.

Mixed media: People who always seem to be texting while watching TV or reading while listening to music may be able to sharpen their focus on their multiple tasks by taking a break every now and then to count their breaths. In a new study out of the University of Wisconsin-Madison, researchers found heavy media multitaskers scored significantly better on attention tests after performing the breathing exercise.

Rise and shine: A new study out of the University of Birmingham suggests older people may develop better immunity after a flu shot if they get the shot in the morning. According to the investigators, a significantly larger antibody concentration was seen for two of the three strains in the shot one month later in patients who received the shot early in the day. ■

Industry Watch

PH Association names new president

Brad A. Wong has succeeded Rino Aldrighetti as president and CEO of the Pulmonary Hypertension Association. Aldrighetti retired in June after 17 years at the helm of the organization. Wong comes to the position from the Foundation of the American Academy of Ophthalmology, where he served as executive director and was noted for creating a number of innovative programs, increasing funding for the organization, and establishing strategic collaborations.

GSK announces study results

New data from two pre-specified analyses from the Study to Understand Mortality and MorbidITy (SUMMIT) suggest some benefit for Breo® Ellipta® (fluticasone furoate/vilanterol or FF/VI 100/25mcg). Presented by GlaxoSmithKline at the recent American Thoracic Society conference, they first demonstrated that patients with COPD who had moderate airflow limitation and were receiving the treatment achieved improvements in exacerbations compared with placebo. The second analysis, however, demonstrated these patients reported similar rates of pneumonia when taking FF/VI 100/25mcg compared with placebo. Previously published results from the SUMMIT trial found all-cause mortality was not affected by the therapy or its components.

Study says Aerobika® improves quality of life

A recent study in the *Journal of Chronic Obstructive Pulmonary Disease* found the use of the Aerobika® device had a significant impact on quality of life for patients suffering from chronic bronchitis. Among sputum-producing patients, daily use of the Aerobika for three to four weeks produced significant improvements in lung capacity, mucus clearance, exercise tolerance, and quality of life. “Patients suffering from COPD now have a safe and easy-to-use method to address the unmet need of mucus clearance, which can potentially reduce the need for hospitalization,” said Dominic Coppolo, MBA, RRT, FAARC, vice president of clinical affairs at Monaghan Medical Corporation. Monaghan distributes the device in the United States.

Marc Ginsky comes on board at CF Foundation

The Cystic Fibrosis Foundation has appointed Marc Ginsky as executive vice president and chief operating officer. Ginsky will oversee the foundation’s daily operations with a focus on field management, information technology, and infrastructure. He joins the foundation from Covance, a leading contract research organization supporting clinical trials and the market access needs of its clients. “Marc brings significant expertise in health care, with almost two decades of experience, and will be an extremely valuable addition to our team,” Dr. Preston W. Campbell, III, foundation president and CEO, was quoted as saying.

Theravance drug found effective against HABP/VABP

According to Theravance Biopharma, Inc., findings from the post hoc analyses of the previously completed Phase 3 Assessment of Telavancin for Treatment of Hospital-Acquired Pneumonia (ATTAIN) studies suggest the antibiotic, marketed as VIBATIV®, may serve as an appropriate treatment for select types of monomicrobial *Staphylococcus aureus* (*S. aureus*) hospital-acquired and ventilator-associated bacterial pneumonia (HABP/VABP). Data showed comparable clinical cure rates for telavancin and vancomycin among the ATTAIN trials’ all-treated patients with monomicrobial *S. aureus*, including both methicillin-resistant *S. aureus* and methicillin-susceptible *S. aureus*. The findings were presented at the recent ATS conference.

AAFA certification program celebrates tenth anniversary

The Asthma and Allergy Foundation of America (AAFA) marked the 10th anniversary of its asthma & allergy friendly™ Certification Program last spring. Certified products and services have been tested against strict scientific standards and shown to be suitable for families with asthma or allergies in their household. Over 30 product category standards are reviewed by a medical board and used for testing a wide range of household products and services. Certified products appear in over 20 retailers nationwide. “To provide patients living with asthma and allergies a trusted source for suitable products for a healthy home is vital to AAFA’s mission,” said AAFA President and CEO Dr. Cary Sennett. “I am optimistic and excited to see the expansion of our program over the next 10 years.”

Helix BioPharm Corp. launches Phase II study

Helix BioPharma Corp. has announced that the first patient was dosed in the Phase II component of study L-DOS002, the first immunoconjugate-based drug candidate in development based on the company’s novel DOS47 platform technology. The technology uses an innovative approach to modify the microenvironmental conditions of cancer cells in a manner that leads to their destruction. Up to 45 patients will be enrolled in the open-label, non-randomized study to make a preliminary assessment of the efficacy of L-DOS47 in patients with non-squamous non-small cell lung cancer. “This brings us closer to providing new treatment options to late-stage cancer patients,” Helix CEO Dr. Sven Rohmann noted.

Mesothelioma Victims Center offers free reports

The Mesothelioma Victims Center is offering people who are diagnosed with the condition a free report with customized treatment options. Included in the report will be the top mesothelioma treatment physicians in their state or region, along with specific contact information. If a diagnosed person or their family calls the center at (800) 714-0303, it can send a customized treatment options report back to them quickly.

Arch Biopartners receives positive opinion for CF medication

According to Arch Biopartners Inc., the European Medicines Authority’s Committee for Orphan Medicinal Products, has issued a positive opinion recommending AB569 for designation as an orphan medicinal product for the treatment of patients with cystic fibrosis.

AB569 was invented by Dr. Daniel Hassett at the University of Cincinnati College of Medicine to treat antibiotic resistant bacterial lung infections. “This very positive development will serve to accelerate our transition into CF clinical trials that are already planned at the University of Cincinnati and Cincinnati Children’s Hospital,” noted Dr. Hassett. The U.S. Food and Drug Administration recently granted Orphan Drug Designation for AB569 in the treatment of antibiotic resistant Pseudomonas aeruginosa pulmonary infections in patients with CF.

Good results for early lung cancer detection platform

According to ITUS Corporation, its wholly owned subsidiary, Anixa Diagnostics Corporation, has successfully demonstrated that its Cchek™ early cancer detection platform can be used to identify the presence of lung cancer. The company will now expand its ongoing biomarker study to include additional lung cancer samples. “The most common method currently used for lung cancer screening is low-dose computer tomography, an often ineffective approach that generates numerous false positive results,” said ITUS Executive Chairman and Anixa CEO, Dr. Amit Kumar. He notes that costly biopsies are often needed to confirm the diagnosis and says his company’s goal is to reduce the number of traditional lung biopsies.

Studying stress induced use of nicotine

Eric Woodcock, a PhD student in the department of psychiatry and behavioral neurosciences at Wayne State University, has been awarded a two-year, $76,000 pre-doctoral fellowship from the National Institute of Drug Abuse for the project, “Neuropharmacological Investigation of Frontostriatal Network Function and Nicotine-Seeking Behavior in Current Smokers.” Woodstock reports he will investigate the prefrontal cortex, which is associated with higher-order thinking and planning, goal-directed behavior, self-control, and delayed gratification, to see how stress impairs its function. If he finds that stress does impact its ability to work properly, he and other researchers will then investigate medications that may blunt the effect of stress on prefrontal cortex function and possibly increase the likelihood that patients will maintain abstinence from tobacco.

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

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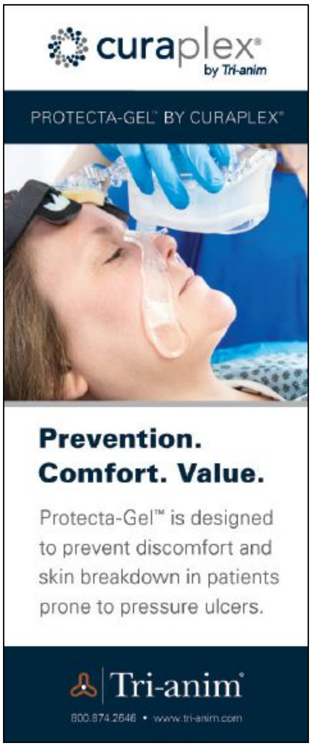

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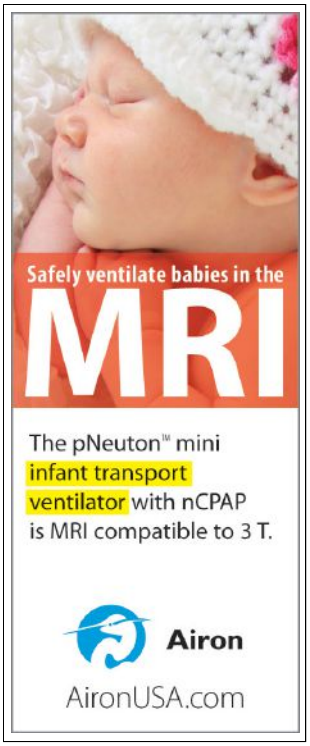

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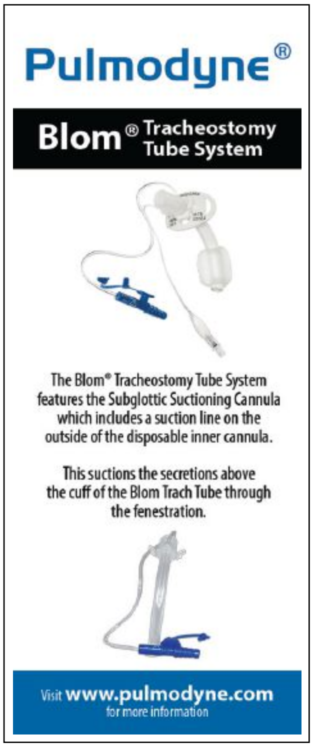

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— 2016 —

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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Calendar of Events

AARC & State Society Programs

August 10–11

Albuquerque, New Mexico, Route 66 Casino

50th Annual Summer Conference "New Professional Horizons"

Contact: cfatta@cnm.edu, (505) 410-9779

September 6–9

W. Columbia, South Carolina

SCSRC Annual Conference

Contact: treasurer@scsrc.org, (803) 936-7511

September 15-16

Daniels, West Virginia

Annual Fall Health Care Conference

Contact: Cynthia.keely@gmail.com; www.wvsrc.org

September 22-23

Muncie, Indiana

Respiratory Therapist: Secret Agents of Healthcare

Contact: marytodd25@yahoo.com, (812) 779-6842

Submissions for the next available issue are due July 20.

For information on submitting calendar events, contact: Beth Binkley, AARC Times 9425 N. MacArthur Blvd, Suite 100, Irving, TX 75063-4706 (972) 243-2272 Fax (972) 484-2720
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The RT's Greatest Generation

Sandra McCleaster, MA, RRT-NPS

A few years back, *AARC Times* launched a column titled *Transitions*, its purpose to communicate the passing of some of its key members. Some names I recognized as therapists I had met and/or worked with through my years of New Jersey Society for Respiratory Care (NJSRC) and AARC activities. Other names were, of course, unfamiliar to me. Nonetheless, the monthly reports became increasingly frequent.

Most recently, the AARC began offering discounted membership status to members age 65 and over. I think that's when I had the epiphany: the respiratory therapy profession's first generation is in its twilight years. As someone in that generation, it served to give me pause, to say the least.

about the author…

Sandra McCleaster, MA, RRT-NPS, is a retired respiratory therapy education program director in Paterson, NJ.

Coming of age

The respiratory care profession really came into its own in the 1960s. As Reflections authors before me have written, our careers were launched pushing O_2 tanks, administering IPPB treatments far too numerous to count, and jerry-rigging equipment to meet the needs of our patients. We were all probably in our late teens or early twenties at the time and all came of age during the prosperous years of medicine and allied health.

The AARC led the formation of its 50 state societies during those years, and its local and national leaders emerged. Innovative therapists in search of better patient care created devices that would become the prototypes for modern-day aerosol and ventilation equipment. The textbooks that became the mainstay of the formal college-based RT educational programs that were emerging across the country were, in great measure, the products of young respiratory therapy teachers and authors. Evidence-minded clinicians reconsidered some patient care modalities, and those IPPB treatments became a thing of the past.

Throughout the ensuing decades, the respiratory therapy profession's first generation laid the foundation for the organized respiratory care profession that exists today. This is really amazing, considering we were moving in then-uncharted territory, ourselves young rookies learning by trial and error every step along the way.

Dozens of forerunners come to my mind, but any talk of the history of our profession must include our memories of Fred Helmholz, MD, whose contributions to the respiratory care profession are legendary. And although not its first executive director, Sam Giordano, MBA, RRT, FAARC, became the face of the AARC for 30 years. Who among us old-timers can forget the day President Ronald Reagan declared the first National Respiratory Care Week in 1982?

New leaders needed

Today, I have concerns for our future leadership. I fear we lack an organized succession plan. The harsh realities of modern medicine have made upward mobility extremely difficult or extremely unappealing. Taking a leadership role or trying to be a "change agent" is often risky business. There's a critical shortage of younger educators in the pipeline.

The AARC, always on top of things, is taking the lead. Its Leadership Institute was developed and designed for those clinicians who want to take their career to the next level in research, management, or education. It's also made mentorship one of its organizational priorities. As a therapist who built her career in RT education, I always considered it a personal responsibility to nurture future leaders. I was proud and

Sandra McCleaster displays one of her vintage postcards — this one a throwback to the days when hospital visitors definitely dressed for the occasion!

happy when a former student became president of the NJSRC and is now a state delegate.

My hope is that many of our younger therapists will march forward to fill the shoes of what I believe will go down in history as respiratory therapy's greatest generation. We've all heard the clichés about "being in the right place at the right time" or "it's not what you know but who you know." Becoming active in one's state society is the best way to be in the right place at the right time and to get to know the right people. That's my best advice to young therapists today.

Staying involved

Although formally retired from my position as program director of respiratory care at Passaic County Community College in Paterson, NJ, I try to remain active in the profession by teaching a course or two in an adjunct capacity. I love students and believe they help keep me young. In addition, I occasionally lecture at local RT educational conferences.

When I'm not busy with professional pursuits, I spend time at my New Jersey shore vacation spot and volunteer extensively with a local literacy organization. I serve on the board of my hometown's local museum and am an avid collector of vintage ephemera, with a special affinity for old postcards. ■

Editor's Note: Sandra McCleaster, MA, RRT-NPS, is a retired respiratory therapist and AARC member. If you have retired, we would like to work with you to craft a story about your life and respiratory care career for our "Reflections" column. Contact *AARC Times* Editor Marsha Cathcart at Cathcart@aarc.org and write "Reflections" in the subject line.