The Coalition Chronicle

Coalition for Baccalaureate and Graduate Respiratory Therapy Education

October 29, 2021 Volume 10 (10)

Mechanical Insufflation Exsufflation Therapy Instruction

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Introduction

Respiratory care education has advanced from on the job training apprenticeships to accredited educational programs. More recently, entry-level associate degree programs are quickly being replaced with entry-level baccalaureate and master's degree programs. This article will explore a potential educational gap believed to exist in many respiratory care programs. Bridging the proposed educational gap should better arm newly graduated respiratory therapists with advanced tools to aid in ventilation and secretion management from ICU to the homecare arenas of practice. The intent of this article is to improve the overall awareness of mechanical insufflation exsufflation therapy (MI-E) as a highly effective airway clearance tool and to promote the addition of MI-E to the educational content of respiratory therapy education programs.

MI-E Therapy & Common Misconceptions

Observation of respiratory therapists from multiple organizations in a variety of clinical settings, has led the authors to believe that respiratory therapists often conceive mechanical insufflation exsufflation (MI-E) therapy as analogous to a vacuum cleaner, that is:

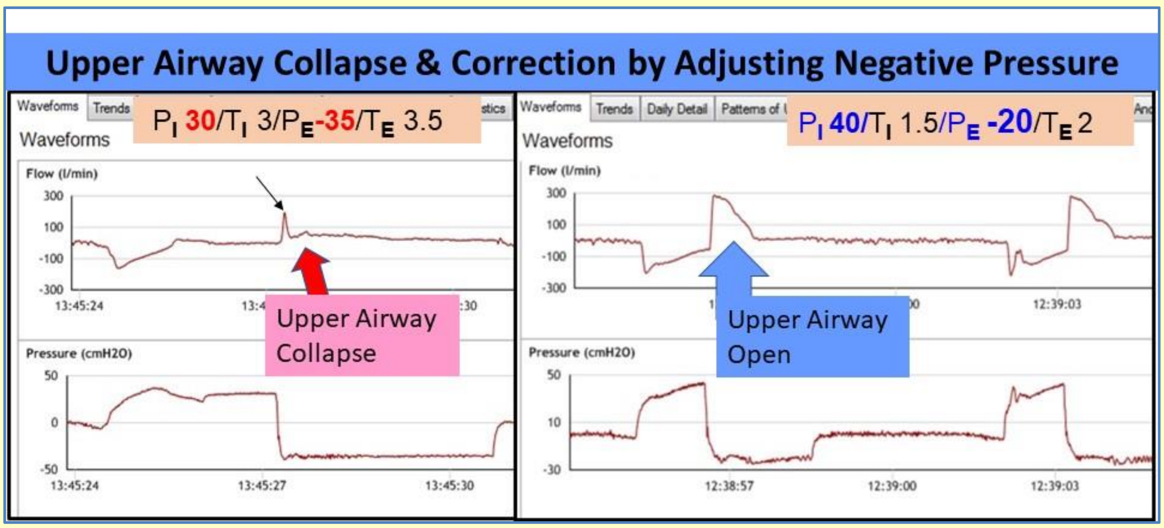
1. more negative pressure will create greater suction
2. the greater the suction utilized, the more secretions will be removed

To underscore this common, yet inaccurate understanding of MI-E therapy, note this description in a 2019 article that appeared in RT magazine:

> *"These machines, also known as mechanical insufflator-exsufflators (MI-E), typically alternate between inflating the patient's lungs and then* ***suctioning*** *up mucus that would otherwise be stuck in the airways."*

When the mechanism of operation is believed to operate solely on the properties of negative pressure or suction force, the respiratory therapist is predisposed to incorrectly adjust settings to increase the impact of the therapy. Unfortunately, this misunderstanding often results in the exact opposite – which can result in less effective therapy. Of note, the addition of more negative pressure often results in upper airway collapse (UAC; ***see graphic Figure 1 below***) in many ALS subjects; especially in the bulbar weakness phenotype, and makes the device ineffective for secretion clearance, difficult to tolerate, and frequently leading to reduced compliance or complete lack of use.[1,2,3]

Graphic Figure 1: Initial UAC is shown (left panel). MI-E settings adjustments produce upper airway patency (right panel). These MI-E waveforms are produced by a patient experiencing UAC during the exsufflation phase of therapy. UAC is indicated by the red arrow (left), the thin black arrow (left) is the decompression spike. Following an increase in the target inspiratory pressure from 30 to 40 cm H_2O; to support positive lung recoil pressure, and subsequently reduce the expiratory pressure setting from -35 to -20 cm H_2O upper airway patency was achieved and the peak cough flow (PCF) increased to almost 300 L/min.



It is important to recognize that MI-E devices incorporate a pressure control mode with target inspiratory pressure and inspiratory time settings much like current pressure control ventilators. The accurate mechanism of operation is not the use of negative pressure to suction secretions from the central airways; rather it is founded on the principle of pressure gradients and lung elastic recoil combined with active patient effort (similar to a *HUFF or cough*) during the exsufflation phase of therapy to increase expiratory flow rates to a level associated with effective airway clearance.

Compounding the therapist's misunderstanding is the instruction that respiratory therapists receive regarding the muscle groups responsible for ventilation – namely, that there are only two muscle groups, inspiratory & expiratory muscles. According to Dr. John Bach (UMDNJ New Jersey Medical School, a leading authority on breathing issues that can arise in individuals with facioscapulohumeral muscular dystrophy and other neuromuscular conditions), there are three ventilatory muscle groups: inspiratory muscles, expiratory muscles, and airway musculature which operate glottic function. The expanded concept is supported by what we know about a healthy cough reflex, often described in three distinct phases: The **inspiratory phase** is associated with achievement of a large lung volume (Inspiratory Capacity), the **compressive phase** is accomplished by a combination of glottic closure and thoraco-abdominal compression, and finally the **explosive phase** occurs when the glottis is opened, producing high expiratory flow caused by the large alveolar to ambient pressure gradient. The glottic muscles protect the lower airway and are directly involved in normal cough function. ALS patients with bulbar weakness eventually lose control of glottic function and the ability to cough, greatly increasing their risk for respiratory infection.

Role of MI-E in the Acute and ICU Settings

Although not specific to the role of MI-E in the ICU setting, the overall therapeutic impact of MI-E should not be underestimated by the respiratory therapist. With regards to impact on survivability, in 2018 Khamankar and colleagues found a significant increase in survivability in an ALS cohort when the respiratory support strategy included daily NIV (BiPAP) and MI-E compared to NIV alone: 25.73 months versus 15.0 months.[4] This study adds to the evidence that the respiratory support strategy for an individual with a neuromuscular disease must critically include both ventilatory support and prophylactic daily airway clearance – a need that increases if the individual is hospitalized.

An effective airway clearance strategy is an important consideration in the care of mechanically ventilated patients. Branson and colleagues identified some of the multifactorial contributors to the risk of secretion retention including: mucociliary disruption by the presence of an endotracheal tube which in turn increases the risk for infection, increased volume of secretion production and thickness secondary to infection, and relative immobilization of the mechanically ventilated patient.[5] Suctioning alone may not result in optimal secretion clearance; in part, due to the difficulty in blindly navigating a suction catheter into the left mainstem bronchus.[6] Several researchers have described improved superior airway clearance when MI-E is incorporated into the ventilator management strategy in a way that avoids the hazards of tracheal suctioning.[7,8,9]

Working in somewhat reverse logic, if MI-E can be a highly effective ventilation management strategy, what role can MI-E play in preventing intubation and aiding in both weaning and extubation? Consider the following highlights from a growing list of emerging evidence that MI-E therapy can play an effective role in these areas as well as others:

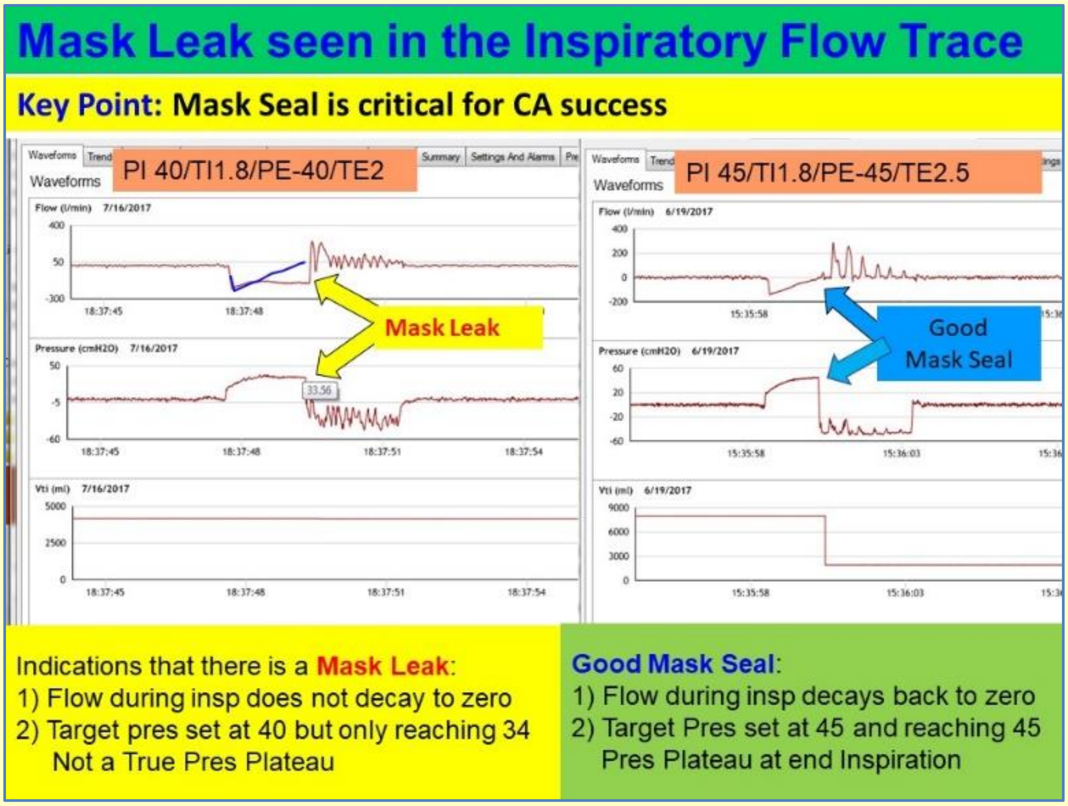
1. Two journal articles pointed to evidence that use of MI-E therapy during mechanical ventilation and post extubation decreased the risk of reintubation and improved overall application of NIV.[10,11]
2. Bach describes successful extubation of 215 patients that were previously labeled "unweanable" without resorting to the placement of an artificial airway.[12]
3. Vianello and colleagues reported success when employing MI-E as part of the therapeutic strategy for preventing intubation or the need for placement of a tracheostomy.[13]
4. Several studies also point to evidence that the inclusion of MI-E therapy potentially decreases hospitalizations in certain at-risk patient populations.[14]

MI-E Graphics Analysis

Just as graphics evaluation is critically important in managing a patient on mechanical ventilation, graphics are equally important in managing MI-E therapy. Unfortunately, most MI-E devices available today do not have live graphics on the display for assisting clinicians in adjusting the device to optimize the therapy. It is possible however, to download the data recorded on the device to a software program for evaluation of the pressure/time and flow/time graphics. To illustrate the utility of graphics analysis in managing the patient receiving MI-E therapy, two examples are presented below that are parallel to graphics that are available on a mechanical ventilator. The formal six steps in graphics analysis were presented in a previous edition of the Coalition Chronicles (Jan 2018)[16] and published in *Respiratory Therapy* in the Fall of 2020.[17]

Figure 2 below illustrates one of the attributes of the pressure control algorithm. Mask leak **(*yellow arrows*)** prevents pressure in the circuit from reaching the target pressure and allow inspiratory flow to continue until the set inspiratory time is complete. Inspiratory leaks prevent the patient from achieving adequate inspiratory capacity, reducing the effectiveness of MI-E therapy, whereas the blue line represents the ideal flow curve. By comparison, the right hand graphic and the blue arrows illustrate good mask seal and the flow decaying to zero with pressure reaching the set target pressure.

Graphic Figure 2: Mask Leak



Graphic Figure 3: Setting Inspiratory Time

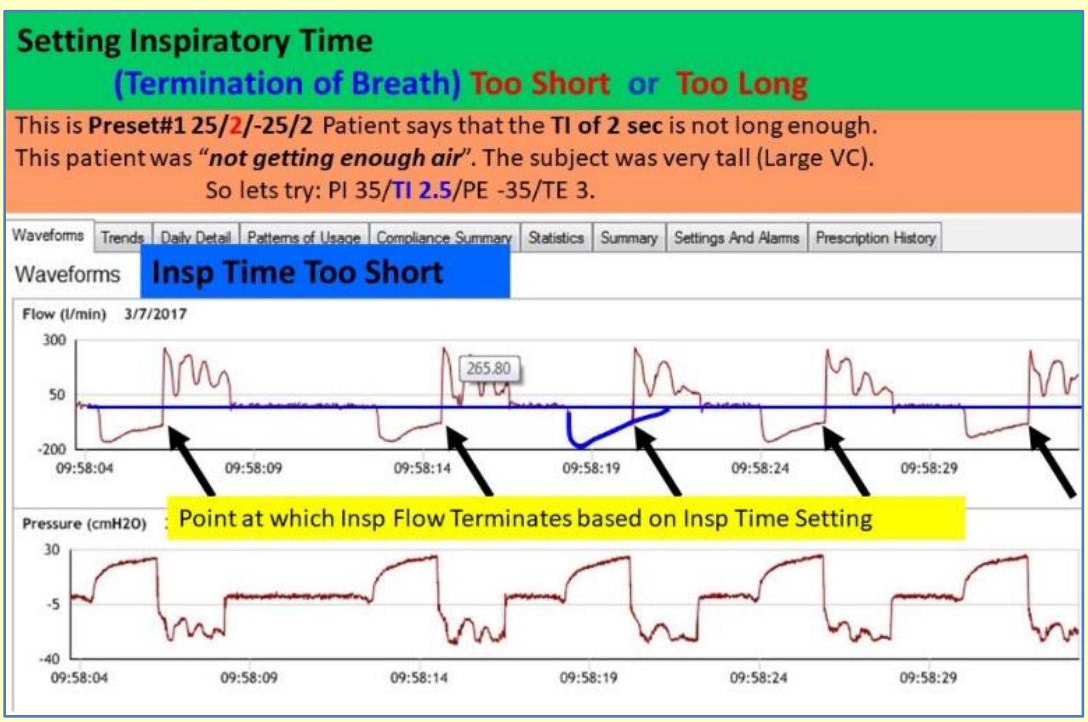


Figure 3 graphic (above) demonstrates how the inspiratory flow trace can be used to adjust the inspiratory time setting. In this example the inspiratory time setting is too short. The patient was approximately 6.5 feet tall and complained that he was "not getting enough air". The blue line represents when flow has returned to zero - it should be noted that gas was still flowing into the patient's lung as seen by the black arrows when the inspiratory time had elapsed, and the valve had closed. By increasing the inhale time setting, the patient was able to receive a much more adequate breath. The bold blue flow line overlaid on the third breath is what the flow trace should look like when the **inspiratory time** is adequate.

While the above examples provide only a brief introduction to graphic analysis on the MI-E device, they both equally illustrate how important graphics are in adjusting settings on the device and how understanding graphics during mechanical ventilation is related to therapy provided by the MI-E device.

Use of the MI-E

Device for Lung Volume Recruitment

A relatively new and frequently overlooked use of a MI-E device is for lung volume recruitment (LVR). Historically MI-E devices have been used predominantly for neuromuscular patients to support prophylactic lung clearance. Over time muscle weakness and reduced inspiratory capacity leads to reduced lung and chest wall compliance as well as increased risk for atelectasis and respiratory infection. The unfortunate consequence is that work of breathing increases and exacerbates preexisting muscle weakness.

A common mitigation strategy in clinical practice has been to perform LVR using a resuscitation bag and a one-way value to stack sequential breaths. For many patients, this requires the assistance of one or more caregivers. The authors have developed a different approach by using a MI-E (CoughAssist®) device.[18] Rather than using both the positive and negative pressure settings, the device can be adjusted to use only the positive pressure. The settings are based on the clinical literature supporting a **critical opening pressure of 40 cm H_2O**[19] and an **inspiratory time setting between 3.5 seconds**[20] and a maximum setting of 5 seconds. Based on the authors' collective experience, the recommendation is to use LVR two to three times each day following MI-E therapy.

There are several potential advantages to using the Cough Assist for LVR including: 1) simplicity and reproducibility of the technique, 2) passive maneuver – does not require glottic function and requires very little energy expenditure,

3) the potential to mitigate or reverse atelectasis (*possibly MI-E therapy induced*) and 4) the potential improvement and stabilization of system compliance.

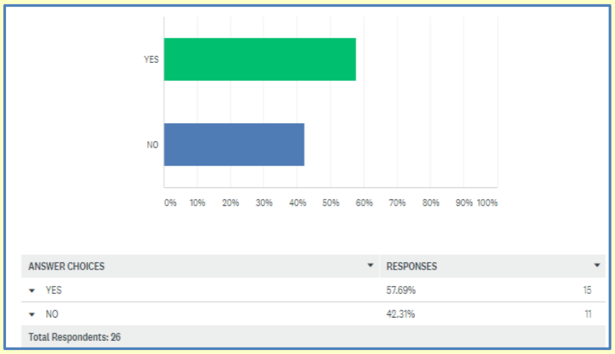
With individuals experiencing both ALS and concomitant bulbar weakness, negative pressure often results in upper airway collapse that may also be associated with a choking sensation. Previously, MI-E therapy was largely thought to be associated with increased risk or a contraindication for use with the bulbar ALS phenotype. The exclusion of negative pressure and sole use of positive pressure during inspiration, on the other hand has been associated with clinically appropriate inspiratory capacities and effective PCF rates. Peak Cough Flow (PCF) is the highest expiratory flow rate achieved during the expiratory portion of the cough maneuver. In the author's collective experience, many of these patients can achieve peak cough flows in the mid to upper two hundred liters per minute – well above the established minimum threshold for effective airway clearance. Clinical literature consistently cites 160 L/min as the minimum expiratory flow to support lung clearance.[21] A recent publication also demonstrated an improvement in peak expiratory flow rates in ALS patients following lung volume recruitment that helped with "improved airway protection for up to 30 minutes - the duration of a typical meal."[22]

Educational Gaps in Respiratory Care Programs

Sources suggest that Mechanical Insufflation-Exsufflation is underrecognized both in the clinical setting and in educational settings. These sources include: 1) Journal articles,[23,24] 2) A survey of all BS/MS entry level respiratory care programs conducted by the authors in preparation for this article, and 3) our own experience with home care companies and ALS clinics in both academic and non-academic settings.

MI-E devices are often not included in the equipment that is available for student use in respiratory therapy, medical or nursing schools. The Canadian study showed that the underutilization of the CoughAssist device was because of lack of training and understanding of the capabilities of the CoughAssist device. The study cited the following: A) lack of expertise - 70%, B) lack of knowledge - 65%, C) lack of resources - 52% and D) lack of equipment - 50%.[24]

In our survey, we queried 62 program directors of baccalaureate and master's degree entry level respiratory care programs. We received a total of 26 responses - representing only 42% of the program educators that received the voluntary survey.

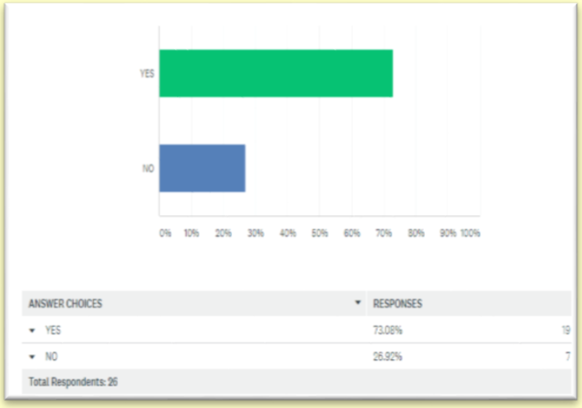


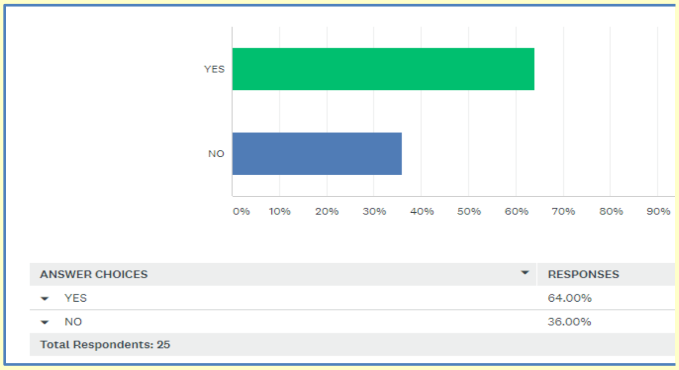
Question 1: Does your respiratory care program own a mechanical insufflation-exsufflation (CoughAssist) device?

- **YES** – 58% (*15 of 26 responses*)
- **NO** – 42% (*11 of 26 responses*)

Question 2: Is there a dedicated hands-on CoughAssist lab experience as part of the current program curriculum?

- **YES** – 73% (*19 of 26 responses*)
- **NO** – 27% (*7 of 26 responses*)





Question 3: During clinical rotations, do the respiratory care students complete a clinical competency to show that they demonstrate proficiency with this airway clearance therapy?

- **YES** – 64% (*16 of 26 responses*)
- **NO** – 36% (*9 of 26 responses*)
- **No Response** (*1 of 26 responses*)

While the responses may at first seem to contradict our leading premise that MI-E instruction represents a current gap in many respiratory care programs, consider the likely responses if the questions were formulated around mechanical ventilation or oxygen therapy instruction. Naturally, one would expect 100% of the survey responses to affirm the availability of lab devices, hands-on lab experiences, and clinical competencies were all foundational elements of the respiratory care program. Based on the last question, our limited survey indicated a trend that one third or more of current graduates have not completed a clinical competency to demonstrate proficiency in the use of an MI-E device. This trend is a significant educational oversight and would likely be found even in a much more extensively completed survey. This trend also has unfortunate implications for the neuromuscular population that are so dependent on these therapeutic modalities and care by respiratory therapists.

Conclusion & Summary Statements

It would be a mistake to leave MI-E therapy instruction out of a respiratory care program's curriculum, or perhaps worse, view MI-E therapy as a strictly a "homecare intervention" and thus a lower educational priority. The current reality is that MI-E is underutilized in both the acute care and long-term care settings. Related to the applications in the acute care setting, MI-E could be used in combination with NIV to reduce the number of intubations, reduce hospital induced pneumonia and facilitate more rapid movement out of the ICU. In long term care or home care both clinicians and patients need to be better educated on the use of MI-E to support lung volume recruitment - this is particularly important for the ALS community in prolonging hospital free days

Part of our responsibility as program directors and faculty is to teach the importance of non-invasive ventilation and MI-E therapy; to include the devices in our lectures and lab exercises; to work with physicians and with our clinical partners - both acute care and non-acute care, in order to better understand the devices and their applications as well as indications for their use. Finally, not only is this a responsibility of faculty to include training at all levels it is also a shared responsibility of the Accrediting Agency and the NBRC to ensure that respiratory care professionals are competent in these modalities.

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Please feel free to contact the authors for educational materials related to MI-E therapy: Jon Nilsestuen jnilsest@gmail.com or David Troxell EFLintrinsic@gmail.com

Professional Positions Posted

***Rowan University, *University of Missouri, *Liberty University, *St. Catherine University, *University of North Carolina-Wilmington, *Augusta University, *Upstate Medical University-Syracuse, *Norton Healthcare, *University of Virginia Health System**

Save the Date

Program faculty and students – please mark your calendars! Educators, please share this information with your students. The AARC and CoBGRTE are co-hosting a Student Journal Club. This virtual event will allow students to interact with a researcher who will discuss an article/research project. Dr. Viren Kaul, Division Chief of Pulmonary Medicine at Crouse Health, will be our first speaker. A huge thank you to Dr. Kaul.

You are invited to a Zoom webinar.

When: Nov 11, 2021 03:00 PM Central Time (US and Canada)

Topic: Student Journal Club

Register in advance for this webinar:

https://us02web.zoom.us/webinar/register/WN_2cxfPpVxS_OGQxqJFCAqXw

The article we will be discussing is Describing the Digital Footprints or "Sociomes" of Asthma for Stakeholder Groups on Twitter | ATS Scholar

Background: Although there is a great deal of conversation on social media, there may not be good communication. Objective: We sought to investigate communication activity online by examining digital footprints (or "sociomes") of asthma stakeholders on Twitter. Methods: Tweets containing the word "asthma" and the hashtag #asthma were collected using Symplur Signals.

Link to article:
https://urldefense.com/v3/__https://www.atsjournals.org/doi/abs/10.34197/ats-scholar.2019-0014OC__;!!ATV5qB4!hP_rC5E-8AolhmBjpaaln_4PBOFbQPuUrqDbDbqqgcIx7Nqm1nBsX-eKNtuLlPnCjQ$

Please contact Christy Kane (ckane@bellarmine.edu) if you have questions.

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Medical Simulation in Times of Pandemics

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The history of simulation training has its forte in high-stakes environments. Military war games and flight simulation for aviation are well known examples. In World War II, pilots with no previous experience, used simulators as they were quickly trained to fly and how to manage their crews as a team in challenging situations. The aviation industry quickly adopted realistic cockpit ground simulators in the 1960s and by the early 1970s, computers were used to support technology. Although simulation for medical training goes back thousands of years, it wasn't embraced significantly until the widespread adoption of Asmund Laerdal's Resusci-Anni for training of cardiopulmonary resuscitation. More sophisticated computer enhanced physiologic-responsive manikins and task-simulators quickly followed along with the use of actors to perform as standardized patients. Medical simulation currently is a major component of the curriculum in healthcare education and evaluation of competency.

A high-stakes environment was created for healthcare with the rapid evolution of the COVID-19 virus and the World Health Organization's declaration of a pandemic in March of 2020.[1] The earlier 2014 Ebola virus outbreak had elicited a response for how simulation could be used to prepare practitioners for safety protocols. As the COVID-19 pandemic surged, healthcare journals began receiving scholarly submissions of observations, early research findings as well as suggested techniques for dealing with patient care. The major medical simulation-related journal in the U.S, *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare,* expedited its peer review process to handle an avalanche of manuscripts and made COVID-19 content freely available to the public for several months.[2]

An example of a comprehensive report of how simulation was implemented in a system-based fashion at a New York City medical center was recently published.[3] Di Pan and Kapil, from the New York Presbyterian Hospital/Weill Cornell Medical Center, recounted their experience as their city was the epicenter of the pandemic in the spring of 2020. A simulation group was formed to review needs, prepare simulation education curricula and implement sessions. The authors felt that simulation played a key part in their institution's response as a tactic to deal with disaster preparedness and crisis resource management. This was evident as simulation identified gaps in safety processes/procedures, formulated infection control strategies and clinical management protocols. Knowledge gaps could be identified as many clinical staff had to train in new roles as they were redeployed due to an exponential increase in hospitalized and intensive care unit admissions. The authors' article details use of simulation in three major categories: primary system-based simulations, primary knowledge-based simulations and challenges they experienced during implementation.

System-based Simulation

Simulations were implemented that covered how to identify gaps in safety and then optimally how to design training protocols to both protect staff and maximize efficiency. These related to use of personal protective equipment (PPE), airway management and training of emergency code teams. The authors reviewed details on each simulation area. Seven high-fidelity simulations were written and conducted in ICUs (in situ). Thirty-five learners participated consisting of RN, RTs, ICU-fellows, and staff intensivists and anesthesiologists. Because of the significant risk of COVID-19's aerosolized transmission, simulations sought to maximize first-pass placement in rapid sequence intubation by the most experienced provider present. Bag-mask ventilation was discouraged as patients were immediately connected to a mechanical ventilator. If necessary, bag-valve devices were fitted with a high efficiency particulate (HEPA) filter between bag and ET tube. Debriefing sessions were instrumental in allowing learners to identify mistakes and offer solutions; major categories included operator errors, missing equipment or setup failure and unfamiliarity with newly implemented COVID-19 guidelines.

Knowledge-based Simulation

The influx of patients requiring ICU care necessitated redeploying clinical staff to perform new roles. Hospitalist physicians supplemented the shortage of respiratory therapists to care for the increased numbers of mechanically ventilated patients. Physical and occupational therapists were moved into ICU practice to serve on "pronation teams" for patients with ARDS lung injury. For the ventilator training sessions, the hospital's simulation group used Zoom-based telesimulation which allowed learners to participated via their home computers. Members of the group could interact with others while connected to hospital's simulation center. A ventilator and patient-manikin simulator were used to replicate COVID-19 respiratory failure as they walked-through several scenarios. Pronation team simulations were conducted "live" in the hospital's rehabilitation department; six 30-minute simulations were conducted over a two-week period to prepare 60 practitioners.

Challenges and Adaptations

The authors' commented that the most dauting tasks were related to maintaining safety for simulation learners and staff shortages. Masking learners in the face of PPE shortages and social distancing in training sessions was not easy. Staff shortages involved both simulation center support staff and faculty. The latter group consisted largely of physicians who also had direct patient clinical responsibilities; they found it difficult to participate in simulations on specific schedules. Many simulation staff who were not in-patient care givers were asked to work from home. The authors compensated for the dearth of teaching staff by rapidly recruiting others with suitable medical background and conducting "train-the-trainer" sessions in writing and conducting scenarios as well as debriefing. Telesimulation did allow involvement of home-based simulation staff especially those who controlled cameras and managed the web-based conferencing software.

Pan and Rajwani touted the advantages of simulation in helping their institution deal with the surge of COVID-19 patients and the increased acuity of illness in these patients. The advantage of simulation was significant in dealing enhanced employee safety, streamlining protocols, and training staff in new skills. The use of in situ ICU training, as well as telesimulation was adapted based on both efficacy and need for learner safety.

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Interview

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1. **Tell us about your early days as a respiratory therapist.**
   - What brought you into the profession?

I chose the respiratory care profession because asthma is prevalent in my family. That motivated me to consider an associate of arts in science (A.A.S.) degree in respiratory therapy at Madison Area Technical College in Wisconsin. It was an opportunity to move off a farm and pursue city life. In the 1970s, the profession was undergoing many changes and finding "evidence" based on research for respiratory care practice was a challenge. This propelled me to pursue a B.S. degree in zoology to strengthen my information gathering skills and science background. I did not know exactly how the degree would help me at the time, but it helped me better understand technical manuals, improved my writing, and added some research skills. The degree also gave my confidence that I "belonged" on leadership teams. **Lesson #1: The benefits of an advanced degree are often more apparent <u>after</u> you engage in classes and obtain the degree.**

2. **Who were your mentors?**
   - What/how did they contribute to your career?

Early in my clinical career a key mentor was Dr. Philip Farrell, a pediatric pulmonologist with UW-Health in Madison, Wisconsin; he consistently challenged me. For example, he looked to me to guide the team while managing our first child on a home ventilator (an Emerson! – not great for a mobile toddler). Later as newer home ventilators emerged, I worked with equipment vendors and other team members to adapt ventilators to a growing child. Dr. William Perloff, a pediatric intensivist, also working at UW-Health, was another mentor who helped solidify my understanding of cardiopulmonary physiology. These mentors pushed me out of my comfort zone; they helped to both develop skills and help me recognize my ability to problem-solve. Although each challenge was uncomfortable, the accomplishment was worth it. **Lesson #2: Get comfortable with discomfort – you will be OK.**

3. **How did furthering your education contribute to your professional career?**
   - What got you on your path as a respiratory care educator?

My move to academia was purely accidental. I knew that other health care leaders had graduate degrees. At the time, courses were not offered through distance education. The only graduate program which offered evening courses on the UW-Madison campus involved adult education, thus education became my major. As I took courses, I realized that distance learning had great potential for RTs who could not attend traditional daytime college courses to complete advanced degrees. This insight about the value of distance learning was not clear to me prior to starting school. Enrolling in courses unveiled the possibilities. After completing my PhD in 1995, I married and moved to New York City where I found a teaching position at Long Island University in Brooklyn. Later in 2012, I had the opportunity to teach in a graduate respiratory therapy program at Rush University and spend more time conducting research. **Lesson #3: Furthering your education, independent of the major, expands your world view and provides opportunities for discovery and growth.**

4. **What are some key lessons you have learned as a clinician, educator, and active participant in professional organizations?**

Professional growth and personal satisfaction throughout my career came from diverse experiences. Networking was key to exploring new opportunities both within and external to my workplace. Volunteering is a great way to explore different roles and grow your network. This network also enhances your primary job as the new people you meet help you solve problems you cannot solve alone. I valued the opportunities I had through the AARC to engage in a variety of service and leadership roles. In 1992, while serving on the 1993 AARC Education Consensus Conference, I met Bill Galvin who helped me better understand how committees worked within the AARC. Jeff Ward gave me an opportunity to coordinate research abstracts for the AARC Education Section in the 2000s. The next decade I had the honor of serving as the Education Section Chair and on the AARC Board of Directors. More recently, Dr. Karen Schell asked me to serve as her parliamentarian during her AARC presidency. On each step of my journey, I learned so much from so many. **Lesson #4: Volunteering returns more to you than you give to others.**

5. **What would you recommend to new graduate therapists just beginning their career?**

The most important first step a newly graduated respiratory therapist could do is gain work experience and refine clinical skills. Learning something new every day is easy in the beginning but make this a lifelong habit. Learn from challenging situations and reflect on how you can improve. Remember that finding happiness in your career is mostly your responsibility. When opportunities in your workplace appear limited, be brave enough to move on if or when you are able. Alternatively, remember to engage in professional organizations such as the AARC and other groups to gain knowledge and leadership experiences outside of your primary workplace. Never underestimate the power of networks and the terrific comradery that results from volunteerism. **Lesson #5: The respiratory care profession can be a lifelong rewarding career!**

Scroll Ceremony….a tradition to consider

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Texas State University – Round Rock Campus
Professor/Chair/BSRC Program Director
Sleep Center Program Director

Texas Medical Board/Texas Respiratory Care Board
Assistant Presiding Officer

CoBGRTE President-Elect

The "White Coat" ceremony conducted in medical schools today is a time honored "right-of-passage" tradition originating at Columbia University's College of Physicians and Surgeons in 1993. The ceremony was developed by Arnold P. Gold, M.D., who sought to bring a humanistic focus to medicine. According to Dr. Gold, "A physician's responsibility is not only to take care of patients, but also to care for patients." The ceremony marks the moment when students begin providing care for patients in the hospital and typically includes medical students taking the Hippocratic Oath. Since its origin, the ceremony has expanded to other health professions including physician assistants, pharmacists, and nurses. In some schools, the white coat has been exchanged for a stethoscope given to the student symbolizing the gift of something that will connect doctors and patients, rather than something that will separate them.

At Texas State University, the College of Health Professions (CHP) is composed of a wide array of health care professionals and very few actually wear white coats. The CHP Dean, Dr. Ruth B. Welborn, saw a need within the college to welcome the new cohort of students into the nine health professions programs in the college and to impress upon the new students the obligation, both serious and somber. Each student is agreeing to provide outstanding healthcare within each of their distinctive professions. Dr. Welborn wished to include all the health professions students in the same ceremony and after much discussion with department chairs and directors, the decision was made to create a new event for the Texas State CHP that would include all new students admitted to their professional programs. Since many health professionals do not wear white coats, the concept of a "Scroll Ceremony" was created in which students would gather for an event with a rolled scroll for each student. The scroll contains an oath taken together as healthcare professionals. It is now a college tradition that each fall semester after student cohorts have been accepted into the nine health professions, the CHP Scroll Ceremony hosts 500+ new students with the faculty in attendance.

The diverse professional degrees offered in the CHP include a bachelor's degree in clinical laboratory science, communication disorders, radiation therapy, respiratory care, health administration, nursing, and health information management. Master's degrees are granted in the health administration, nursing, health information management, communication disorders, and respiratory care disciplines. A clinical doctoral degree is granted in physical therapy.

The Scroll Ceremony attendees hear an address by a healthcare professional on the importance of the oath and the ethical treatment of patients. Afterwards, the chairs/directors call each of their student cohorts to stand and remain standing while Dean Welborn administers the Oath and students respond in unison. The Texas State University College of Health Professions Scroll Oath follows:

As a healthcare professional dedicated to providing the highest quality care and services, I solemnly pledge that I will:

- *Consider the welfare of humanity and relief of suffering as my primary concerns.*
- *Act in a compassionate and trustworthy manner in all aspects of care and services.*
- *Apply my knowledge, experience, and skills to the best of my ability to assure optimal outcomes for all patients.*
- *Exercise sound professional judgment while abiding by legal and ethical requirements.*
- *Accept the lifelong obligation to improve my professional knowledge and competence.*
- *Promote, advocate for, and strive to protect the health, safety, and rights of the patient.*

With this pledge, I accept the duties and responsibilities that embody the healthcare profession. I take this oath voluntarily with the full realization of the responsibility with which I am entrusted by the public.

This gathering is also the perfect opportunity to introduce new students to the concept of interprofessional education (IPE) and following the scroll ceremony students spend about 2 hours in a prepared IPE experience. Disciplines are mixed in each of the group activities to provide a different perspective in each with an understanding that other IPE events are part of their future experiences with the other students, as well.

New Class 2023

The Texas State University Bachelor of Science in Respiratory Care Entry-Level program is approved by CoARC to accept 44 students and this number has been met for the last 25 years. The 44-student cohort representing the Class of 2023 is pictured with the BSRC faculty (with three RC faculty missing). Besides the Entry-Level BSRC degree program, Texas State has a Master of Science in Respiratory Care (MSRC) degree completion program that is entirely on-line and a Bachelor of Science in Respiratory Care degree completion program, also, entirely on-line.

Some Respiratory Care programs offer "pinning programs" for their graduates or other types of entrance or exit traditions that honor students entering the respiratory care profession. Events such as the Scroll Ceremony can boost visibility of the profession, honor the students entering the profession, and set the stage for a life-long career to honor and respect patients, their families, and the interdisciplinary team of healthcare providers.

CoBGRTE Student Report

Jessica Sprague, Tory Grubbs
Bachelor of Science in Respiratory Therapy Program
College of Health and Human Services
University of North Carolina Wilmington

On August 18th, 2021, the University of North Carolina at Wilmington welcomed the first cohort in their new Bachelor's in Respiratory Therapy program. Fifteen eager students arrived prepared to take on the challenges they will face over the next two years.

"UNCW College of Health and Human Services exists to support and care for the health and well-being of those in our region" (Dr. Christopher Lantz, Associate Dean for Academic Affairs). In 2014, it was brought to the attention of the College of Health and Human Services by the Educational Advisory Board that respiratory therapy was in high demand. They recognized a need in the healthcare workforce and saw the transition of respiratory therapy from a 2-year associate degree to a 4-year baccalaureate program. In 2018, the school began the first of many steps to build a respiratory therapy program. There are many levels of governance the school must pass through.

The first level involved a faculty vote of the health and applied sciences. The majority voted to start the respiratory therapy program. Level two was a document called a "request to plan," through the UNC system. This document contains information about the labor market demand, student demand, and the competition of this type of program. UNC Charlotte is the only NC university that has a Bachelor's in RT program; however, this program is all online. UNC Wilmington has made history by becoming the first in-person RT program in North Carolina. The last levels to establish this program are regional accreditation and accreditation by the Commission on Accreditation for Respiratory Care.

All these levels were completed, and UNCW began to build a team of professionals to lead the upcoming students. Due to our small cohort, students have the unique opportunity to have created such a tight-knit community. This allows us to have more opportunities to have individualized attention from instructors, foster closer connections with classmates, and have more discussion and hands-on experiences.

The first fall semester consists of six courses and one clinical day each week. The classes the students are taking include cardiopulmonary pharmacology, cardiopulmonary anatomy and physiology, fundamentals of respiratory care with lab, and patient assessment with lab. In lab, students have recently learned how to provide oxygen therapy, intubate, and take an arterial blood gas. Students have learned the basics of patient interaction and patient assessment. They have been taking these skills and applying them to real patients during clinical hours.

Students have the opportunity to learn from many clinical sites; a few being Duke Hospital, WakeMed Hospital, New Hanover Regional Medical Center, and New Hanover Regional Medical Center Orthopedic Hospital. This provides the students with multiple different experiences in order to become a well-rounded respiratory therapist in the future. Clinicals will continue till the end of the program, and next semester will consist of five new classes and will discuss mechanical ventilation. The students have found that this program is challenging, but with a family-like environment, they help each other and are very supportive.

Two respiratory therapy students from the cohort in the lab practicing intubation.

The cohort has a total of five incredible professors: Dr. Michele Pedicone, Jamy Chulak, Thomas Nietman, Tina Frazier, and Karen Blain. These professors are top of the line, being present day and night to support and prepare us for our licensure exams and health care field. They have all expressed unrelenting excitement to teach and are flexible with our needs.

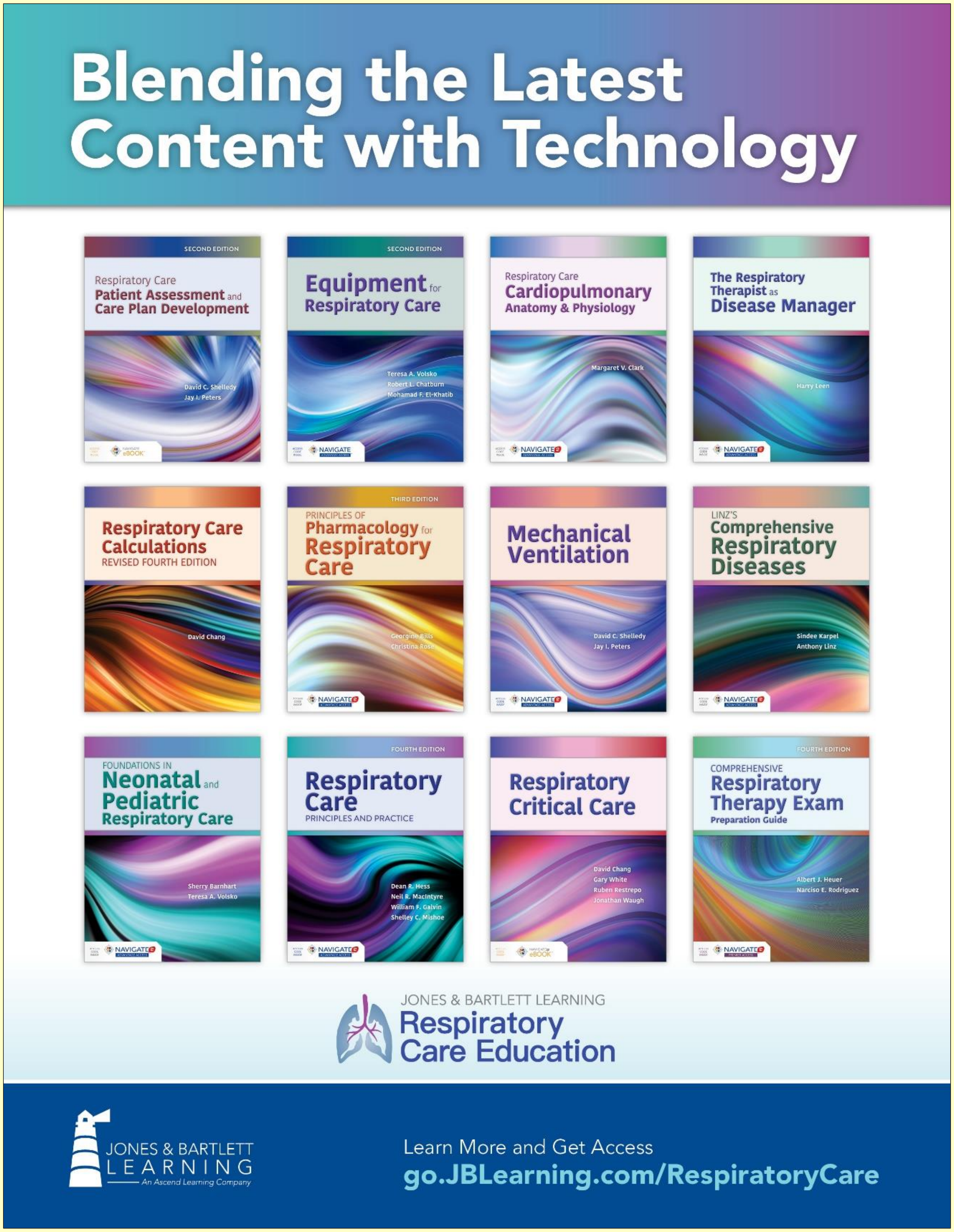
Our program coordinator and clinical associate professor, Jamy Chulak, along with Thomas Nietman, our director of clinical education and clinical assistant professor were described as “the true architects of UNCW’s respiratory therapy program" (Dr. Lantz). When asked what the motivation was for stepping up to build the program, Chulak responded with

> "the community needs more respiratory therapists to serve patients who suffer from cardiopulmonary diseases. Founding the first entry to practice respiratory therapy degree at the baccalaureate level in North Carolina is a special honor that I hold in high regard. Having a group of students, in my first cohort, who are actively contributing to develop a culture for future generations of students at UNCW, is among the highlights of my career."

Students also have the unique opportunity to help shape the program for future cohorts. We are currently working with UNCW's University Learning Center (ULC), where academic services such as peer tutoring and writing help are provided. Starting in fall of 2022, when the next cohort enters the program, we will have one to two students from the first cohort tutoring the incoming cohort. This will act as a mentorship and set up a program that will continue to help guide future cohorts.


Two respiratory therapy students from the cohort in the lab practicing taking vital signs

In addition to creating peer tutoring for respiratory therapy, students are also working to create a respiratory therapy club at the university. This will serve as a resource for current students but will also be open to prospective students as well. Through the club, members will be able to raise money and attend healthcare conferences and create service opportunities to work within the community. Overall, the program will continue to expand and work towards welcoming the new cohort next fall while supporting the current cohort.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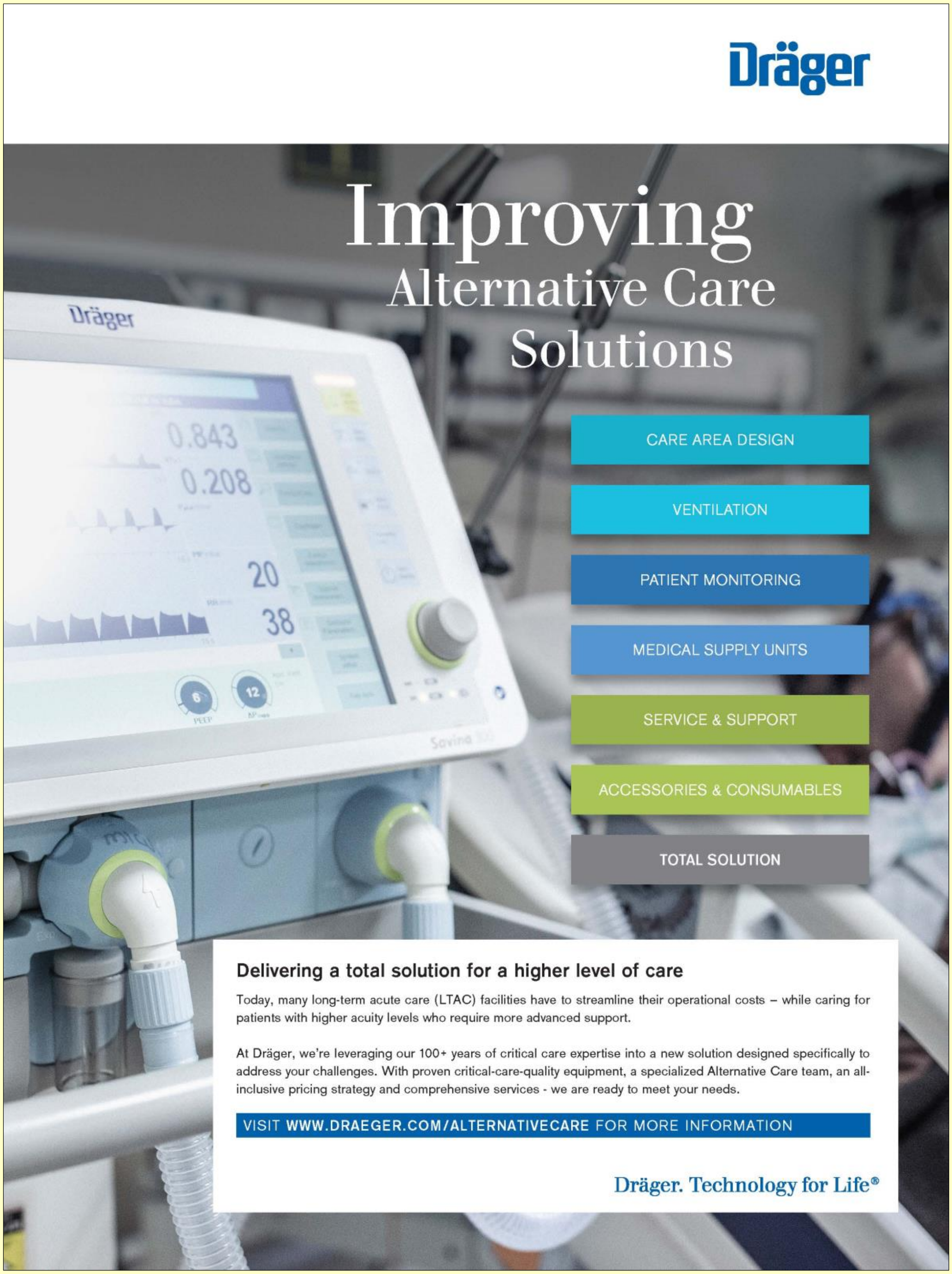
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CoBGRTE™

If you haven't already decided to become a CoBGRTE member after visiting www.cobgrte.org, the following are 14 reasons why you should join the coalition.

Reasons Why You Should Become a CoBGRTE Member

1. Award scholarships to baccalaureate and graduate respiratory therapy students.
2. Assist in the development of ASRT to BSRT Bridge Programs.
3. Collectively work towards the day when all respiratory therapists enter the profession with a baccalaureate or graduate degree in respiratory care.
4. Support a national association, representing the 70 colleges/universities awarding baccalaureate and graduate degrees in respiratory care, to move forward the recommendations of the third 2015 conference.
5. Help start new baccalaureate and graduate RT programs thus leading to a higher quality of respiratory therapist entering the workforce.
6. Work to change the image of the RT profession from technical-vocational-associate degree education to professional education at the baccalaureate and graduate degree level.
7. Mentoring program for new graduates as well as new faculty members.
8. Join colleagues to collectively develop standards for baccalaureate and graduate respiratory therapist education.
9. Develop public relations programs to make potential students aware of baccalaureate and graduate respiratory therapist programs.
10. Help to publicize, among department directors/managers, the differences between respiratory therapists with associate, baccalaureate and graduate degrees.
11. Access to over 75 Spotlight articles on BSRT and RT graduate programs, and major medical centers.
12. Round table discussion dinners and Meet & Greet member receptions held in conjunction with the AARC Summer Forum and the International Congress.
13. Help to support maintaining a roster and web site for all baccalaureate and graduate respiratory therapist programs.
14. Collaborate with CoARC and AARC to improve respiratory therapy education.

Editorial Board

Photo by James Wheeler British Columbia, Canada

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