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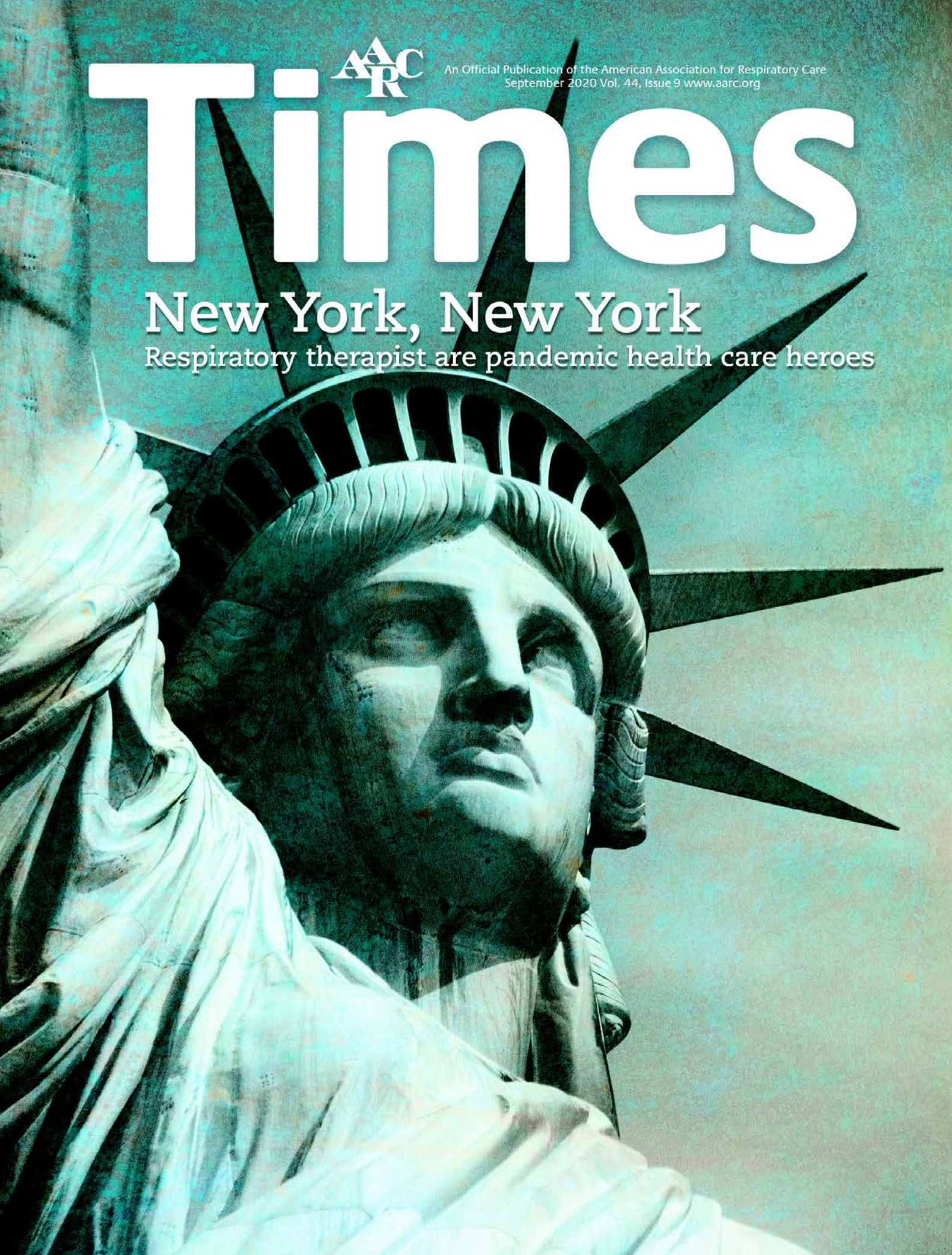
New York, New York

Respiratory therapist are pandemic health care heroes



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New York, New York

Respiratory therapists are pandemic health care heroes!

by Kim Bennion, MsHS, RRT, CHC

Respiratory therapists are compassionate caregivers who are often the most misunderstood and unsung heroes of health care. Of course, those of us who have entered the field seek to be caregivers, not heroes. But it is nice to be recognized, and during the COVID-19 pandemic, we've seen our fair share of recognition.

Workers at the airport gathered to welcome the "health care heroes.

In an article published in the Washington Post on April 7, 2020, Dr. Chethan Sathya acknowledged the worth of a respiratory therapist. "They're often the first to be called by nurses when a patient is having trouble breathing," he said. "They know more about oxygen, breathing support, and ventilators than most others in the hospital. They work complex machines, suction secretions from the airway, take patients off the ventilators, and, in many hospitals, they even position the breathing tube in the first place or teach trainees how to do so."

Kate Wright traveled to New York to help with the pandemic. Wright (right) in her COVID-19 pandemic gear.

Jesse du Toit found an empty Times Square during the visit.

The key role we've played in the response to COVID-19 has definitely raised awareness of our profession, and it has also meant that we are in high demand. A team from Intermountain Healthcare left Utah when a call came to assist with the COVID-19 pandemic surge in New York. Kate Wright, BSRT, RRT, Fred Asthton, RRT, and Jesse du Toit, BSRT, RRT, each served approximately two weeks in New York during some of the state's most challenging times.

I interviewed each of these therapists upon their return to learn more about their experiences. The following paragraphs offer a snapshot of their stint on the frontlines.

Facing the unexpected

All three RTs expressed compassion as they reported equipment, supply, and staffing shortages. "There were times I had to tie a tube with shoe-lace sized strings that cut brutally into the face, but there were no other options," said Kate Wright.

The RTs found a jungle of equipment awaiting deployment.

Jesse du Toit recalls the overwhelming number of ventilators in operation at any given time. “This hospital typically had about 30 ventilators running prior to COVID-19, but they had 133 running during my first shift . . . we were having rapid responses every 15–20 minutes, which was rather challenging. There were several shifts during which I was assigned 22 intubated patients, with me being the sole RT providing for them.”

Fred Ashton served two weeks in New York, along with colleagues Kate Wright and Jesse du Toit.

Fred Ashton recalled this about the hospital he worked in: “An incredible amount of resources had been dedicated to creating patient care areas out of essentially ‘blank’ spaces, such as break areas or conference rooms, and maintaining more visible spaces.”

Practicing self-care

In its severe form, COVID-19 is a brutal disease, and with so many patients adversely affected, the pain and suffering encountered by our RTs was sometimes hard to take. They did what they could to take care of themselves so they could continue taking care of those who needed them most.

According to Wright, “The burden of lives lost every day was overwhelming, especially while being away from home and a regular support system. All I could do was try to get plenty of sleep, remember to eat, and keep going to work the next day.”

du Toit’s team created a plan to deal with the stress. First and foremost, everyone was assigned a “battle buddy.” Your buddy looked out for you and you looked out for your buddy. This plan of action was felt to be very effective. “I think everyone underestimated the cumulative effect that social distancing and all the masked and unfamiliar faces would have on them,” he said. “A few days in, I managed to assemble a small group for the purposes of keeping tabs on each other — and socializing, to the limited extent possible.”

Special heroes

We know RTs are health care heroes. These therapists found health care heroes across the board during their time in New York as well. du Toit reported a deeply touching story that reflects his concept of health care heroes during the crisis. In his words, “The ‘heroes’ for me were the health care workers who kept coming into work despite having a loved one sick with COVID-19. There were multiple heroes whom I met with loved ones in the ICU, and they kept on picking up extra shifts so that they could help care for someone else’s loved one. It was very humbling to work with true heroes like that.”

These two nurses took Ashton under their wing during his time in the city.

Ashton put it best when he said, “There were several nurses in Heart CCU, which was one of five cardiac ICUs, who treated me with the trust, respect, and comradery of a valued, long-time coworker. Two of them specifically were Darya Gavrilova and Amanda Gariola. They brought me into their unit family by making sure I was part of the coffee run or food order, helping me with needed items or patient issues, or just talking. If this pandemic affected their patient care or dampened their spirits, I couldn’t tell . . . they are outstanding nurses and they are heroes for those they care for. But whether they realized it or not, they were heroes for me. I was only there for two weeks and got to come back to Utah. They have been there the whole time with no end in sight.”

Unique skills and expertise

Respiratory therapists possess a depth of knowledge in respiratory care that often goes unnoticed. Our RTs found a new appreciation for many of their skills in New York. Wright offered a great example.

“The tenacious tan secretions and mucous plugs associated with ventilated COVID-19 patients are enough to end a patient’s life if not managed appropriately,” she said. “Experience with secretion management was one huge asset [that] Respiratory was able to bring. We immediately began vigorously suctioning every patient and preaching the importance of it to nursing staff and providers.”

If you knew then what you know now . . .

Despite what they saw during the “heat of the battle,” these respiratory therapists say they would still volunteer to march in to provide expertise and compassionate care. Would they recommend the experience to their peers? It depends.

Wright explained that she “would absolutely encourage other RTs to participate on the front lines. I know from experience that just one competent RT on the team can mean the difference between recovery and death for these patients.”

Ashton stated it another way when he said, “I don’t think I would actually encourage anyone because the physical and emotional stakes are high. You really can’t know what you are getting into until you are there, and it could change quickly. You want someone to be there because they wanted to [be there]. It would be someone with enough experience to be able to walk into a unit and assume an unreasonable load of critical patients on equipment they may not have used before, without orientation, guidelines, report, or access to charting or patient data.” He says it would need to be someone who could “do it with little support while assuming responsibility for their own personal safety and could successfully return to normal standards of care afterward.”

Wish list

When asked what they wish they would have taken with them to the front lines, Jesse du Toit said it best. “One thing I wish I could have brought with me and used on patients is the set of protocols that Intermountain Healthcare has for respiratory care. The protocols we have in place give us autonomy to practice within reason. I found it extremely frustrating having to ask a busy practitioner to make a ventilator change that I could have done myself under the protocols that I am used to.”

Fred Ashton was creative in keeping himself from contamination. When asked this question, he reported, “One of the things I struggled with initially was finding a way to chart in a manner that would not contaminate myself or everyone else with papers that were moved in and out of rooms. While this might seem like a simple problem, it didn’t have a simple solution. I was able to order a folding clipboard, and have it shipped to my hotel by second-day air. This allowed me to have paper and a clean writing surface to use, and it was easy to decontaminate the outside of the folded clipboard before placing it in my pocket.”

This sign was updated on a regular basis to celebrate COVID-19 success stories.

Hats off

As respiratory therapists, we embrace high-quality, safe patient care. Our hats go off to these health care heroes who left the comforts of home to enter directly into the pandemic “war zone.” Respiratory therapists make a difference every day. Working as valuable members of the health care team, we recognize what others may well have forgotten: “When you can’t breathe, nothing else really matters!”

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Respiratory Therapists Play an Important Role in Tracheostomy Management

by Steve Babyak, RRT, ACCS

Around 350 BC, somewhere within the Persian Empire, it was reported that Alexander the Great saved a soldier from asphyxiation by piercing the man's neck with the tip of his sword.[1] Commonly known as tracheostomy, this procedure can be traced even farther back to ancient Egypt, where stone tablets portrayed a human figure with a stoma in the neck region.[2]

Once thought to be irresponsible and frivolous, tracheostomy is now a common medical procedure. In the United States alone, more than 100,000 tracheostomies are performed annually.[3] More than 25% of these are implemented on critically ill patients requiring mechanical ventilation.[4]

Indications for tracheostomy include airway obstruction, prolonged endotracheal intubation, and airway maintenance. These issues, while possible to control, often require lengthy hospital stays. Lengthy hospital stays may engender unwanted complications such as pressure ulcers, nosocomial infections, and altered mental status. Although a patient's hospitalization may be complicated by other comorbidities, the presence of a tracheostomy can create specific challenges.

Complications originating from a tracheostomy are often categorized as early or late. Early complications occur within the first week of placement and may include bleeding 5.7%[10] , stomal infection 6.6%[10], subcutaneous emphysema 0% to 5%[11], and tube obstruction 0% to 3.5%.[12] Sutures often are used initially to hold the new appliance in place and can be removed within 7–10 days.[6] This allows the tract to mature and minimizes the risk of accidental decannulation. Inadvertent decannulation before a mature tract has been established can be devastating as rapid airway loss can occur.[2]

Within the first week, respiratory therapists should be diligent to look for early complications during routine trach care. Bleeding or pus-like secretions should be recognized along with the ability to pass a suction catheter. A secure and patent airway should be a key focus. Tracheostomy tube cuff pressures should be monitored and recorded to avoid mucosal damage.

Late complications associated with tracheostomy tube placement can become rather challenging. While the frequency of late complications is an astonishing 65%, many of these are preventable.[7] Complications include tracheal stenosis 3% to 12%[5], excessive bleeding 0% to 1%[5], and obstruction 0% to 3.5%[12]. Tracheal stenosis is the most common late complication associated with placement.[5] Tracheal stenosis

results from inflammation and the formation of granulation tissue. Excessive cuff pressures (eg, >25 mm Hg8) or irritation of the tracheal wall by the tip of the tube are often responsible for ulceration and resulting stenosis.

Bleeding and obstruction are often more obvious complications than stenosis, but they can be dealt with effectively if recognized swiftly. Bleeding in or around a tracheostomy can be insignificant or crucial. Bleeding may occur when irritation results from aggressive suctioning or manipulation of the tube itself. Bleeding more than 72 hours after the procedure should be assessed for innominate artery involvement or erosion of a nearby vessel.[9] Blood loss during the late phase can be life threatening if not dealt with in a timely manner.

Tracheal tube obstruction can present in several forms, including a tube resting against the tracheal wall, an overinflated cuff partially obstructing the distal lumen, or a mucus plug from dried secretions. Symptoms of obstruction fall within the realm of respiratory distress. Patients with an obstructed airway may display agitation, labored breathing, or hypercapnia. All of these indications may occur simultaneously and should be easily recognized by a proficient respiratory therapist.[3]

Respiratory therapists are specially trained to recognize and deal with late complications associated with tracheostomy tube disposition. Monitoring cuff pressures, tracheal suctioning, routine trach care, and airway hydration are duties performed by respiratory therapists on a daily basis.

As the number of tracheostomies performed continues to rise, the need for adequate care becomes paramount. The presence of an artificial airway presents an environment where associated complications may exacerbate comorbidities and extend hospital stays. However, in an effort to ameliorate these issues the presence of a multidisciplinary trach care team (MDT) is highly recommended. Studies have shown a decreased length of stay and decreased time to decannulation when the team is involved.[14] A specialized team will categorically impact the clinical outcome of tracheostomy patients and promote a safe and progressive environment.

The makeup of the MDT is crucial for its success and the respiratory therapist should be a key member of this team. Being especially skilled at airway maintenance, the respiratory therapist is capable of understanding and dealing with tracheostomy-related complications. From the moment the tracheostomy is placed, the respiratory therapist is responsible for maintaining the airway. The care bundle approach is preferred and can ensure proper attention is provided for each patient. The respiratory therapist is responsible for the following tasks within the bundle: Observing a patent and secure airway, measuring proper cuff pressure ranges, delivering adequate airway hydration, and placement of back-up tracheostomy tube along with resuscitation equipment.

The progressive nature of health care demands specialized care. With a respiratory therapist leading the way, patients requiring tracheostomies will receive optimal management. Complications and hospital stays will be minimized, and the overall elevation of patient care will be achieved.[4]

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eNAVA: What's the Big Deal?

by Emilee Lamorena, MSc, RRT, RRT-NPS

Acute respiratory failure is a leading cause of morbidity and mortality in neonatal and pediatric ICUs, and mechanical ventilation remains a cornerstone of therapy for these patients. However, there are many documented consequences of mechanical ventilation , including delayed recovery, prolonged mechanical ventilation, loss of muscle strength, ventilator-induced lung injury, and patient-ventilator asynchrony .[17] Neurally adjusted Ventilator Assist (NAVA; Maquet®, Sweden) is a mode of ventilation that, in theory, may mitigate these risks while improving aspects of patient-ventilator dynamics to achieve optimal ventilation goals.

To understand the mechanisms and theory behind NAVA, one must review the human body's normal control of breathing. The respiratory center, located in the brain's medulla houses chemoreceptors that sense changes in pH and CO_2. They send a signal down the phrenic nerve to the external intercostal muscles and cause the diaphragm to contract. This results in generation of negative intrathoracic pressure, causing chest wall and lung expansion, thus initiating inspiratory air flow that results in spontaneous breathing.[1]

Current ventilator technology triggers when the patient initiates the breath, responding to negative changes in flow or pressure. Inappropriate sensitivity settings are problematic; a trigger that is too sensitive may cause hyperventilation, auto-triggering, and atrophy of the respiratory muscles, whereas a trigger that is not sensitive enough may cause excess energy expenditure. Even when set appropriately, there is a delay between the central nerve impulse from the brain and the actual release of the ventilator-assisted breath.[2] All of these factors can lead to ventilator-patient trigger asynchrony.[17]

Additionally, conventional mechanical ventilation delivers identical breaths at clinician-chosen volumes or pressures, frequency, and inspiratory time (I-time). When these clinician-chosen settings are not synchronous with the patient's actual respiratory demand, it can cause further patient-ventilator asynchrony, resulting in patient discomfort and increased need for sedation.

What is different about NAVA?

NAVA allows the patient's own neural respiratory drive to control the timing and amount of assistance provided. It employs the use of a NAVA catheter, which is inserted as a nasogastric or oral tube. It has

small sensors that measure the electrical activity of the diaphragm, translated into the "Edi signal," which contains important afferent information electrical activity and force of the diaphragm. The Edi peak corresponds to the patient's instantaneous neural respiratory drive, and the Edi minimum represents the tonic activity of the diaphragm.

The NAVA level is a "coefficient of support," that converts the Edi signal into a proportional pressure. The NAVA level multiplies by the instantaneous difference between Edi peak and Edi minimum to determine the change in pressure above PEEP – thus determining the peak inspiratory pressure (PIP) of each breath.[15] The Edi signal allows improved triggering capabilities as well as physiological variations in tidal volume and inspiratory time from breath to breath – ensuring that breaths are synchronous with the patient's instantaneous respiratory demand.

NAVA, in theory, aims to avoid excessive support, maintain spontaneous breathing, , improve patient-ventilator synchrony, and facilitate breath-to-breath variability while supporting adequate gas exchange and patient comfort.[3]

Patient Ventilator Synchrony in NAVA

Several studies suggest that NAVA may improve patient-ventilator synchrony when compared with conventional modes of ventilation. A systematic review published by Beck et al. investigated patient-ventilator synchrony of NAVA in pediatric and neonatal populations (16 studies, 218 patients)[2]. Confirming findings from adult studies, all pediatric studies showed that, when compared to conventional modes of ventilation, patient-ventilator interaction is unequivocally improved during NAVA - with an asynchrony index of 0-20% in NAVA, with 12-73% during conventional modes.

When further broken down into age groups, Beck et al.4 studied NAVA specifically in low-birth-weight premature infants. When compared to conventional ventilation, NAVA demonstrated more accurate triggering, cycling off, and proportionality of assist to patient effort. Similarly, in older children, NAVA reduced trigger delays and cycling off errors by 44%[5,6,7,8]. These findings were replicated in NIV-NAVA in studies that showed improved patient-ventilator interaction when compared with NIV-PSV[8,9]. These studies attributed the improved synchrony to reduced trigger delays and a reduction in ineffective efforts.

Is NAVA a Lung-Protective Strategy?

The continuous reading of the Edi signal in NAVA allows the patient to synchronize their spontaneous respiratory efforts with the ventilator and maintain control over their respiratory pattern. Several studies have demonstrated that on NAVA, pediatric patients spontaneously choose lower peak inspiratory pressures (PIPs) mean airway pressures (MAPs), and tidal volumes.[2] This can be attributed to overall improved comfort (due to better synchrony) and continuous response to the reflex control of the brain.

By protecting the patient's innate neural reflexes, NAVA offers many lung-protective advantages. As a result of the Hering-Breuer reflex, stretch receptors in the lungs will "switch off" inspiration once they sense an adequate tidal volume. This feedback mechanism inhibits the inspiratory center of the brain and forces the patient into exhalation before overdistention occurs.

In NAVA, the ventilator acts as a secondary respiratory muscle. Titration of NAVA level transfers the work of breathing between the diaphragm and the ventilator. Even at the highest NAVA levels, the Edi signal continues to direct ventilation while the ventilator assumes most of the work - allowing the patient to always be in control. Several studies[10, 11, 12, 13, 14] demonstrate that as the NAVA level is initially

increased, the PIP delivered increases. This pattern continues until the diaphragm's work is adequately unloaded. Every patient exhibits a "breakpoint" (BrP) NAVA level at which respiratory muscle unloading becomes sufficient, and further increases in NAVA level no longer increase the PIP. Instead, the Edi signal begins to decrease, suggesting suppression of the neural inspiratory drive. Firestone et al.[15] found that even premature neonates exhibited sufficient respiratory control and feedback mechanisms mature enough to achieve respiratory muscle unloading.

These findings suggest that by allowing the patient to maintain control of breathing, NAVA allows their neural reflexes to protect from overdistention and volutrauma, maintaining lung-protective ventilation.
Can NAVA Improve Clinical Outcomes?

Of 7 main pediatric studies comparing NAVA to pneumatic ventilator modes, Kallio et al.[16] published the only randomized controlled trial studying the effects of NAVA on clinical outcomes. In this study, 170 PICU patients were randomized to receive either conventional mechanical ventilation or NAVA. While time on the ventilator did not differ significantly between both groups, children in the NAVA group had a statistically significant shorter PICU length of stay. When post-operative patients were excluded, the sedation in the NAVA group was significantly lower. This demonstrates that the Edi may be a powerful measure of a patient's own breathing drive, reducing the risk of sedation overdose. In the NAVA group, they observed lower PIPs, with improved FiO_2 and oxygenation index – suggesting that NAVA patients were adequately able to transfer oxygen to their tissues with less stress to their lungs. Ultimately, patients showed improved $PaCO_2$ at lower PIPs, supporting that NAVA may be more successful than conventional mechanical ventilation at achieving lung-protective strategy.

Should We Utilize NAVA more?

Evidence suggests that NAVA may be safe and feasible as a primary mode for use in neonatal and pediatric critical care. Studies show that neural ventilation may be better tolerated when compared with conventional ventilator modes. Overall, NAVA may offer many benefits, including better patient-ventilator interaction, improved comfort, and lower levels of sedation. Studies also suggest that patients on NAVA may achieve oxygenation and ventilation goals often at lower PIPs and MAPs than on conventional ventilation, achieving lung-protective strategy. Despite these findings, its long-term role in pediatric critical care still remains uncertain. There is little data to discuss NAVA's impact on duration of mechanical ventilation, hospital length of stay, and mortality, and overall most of these findings from small studies are theoretical or unconfirmed. While NAVA offers promising benefits, larger randomized controlled trials are needed to fully understand its impact on clinical outcomes.

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about the author…

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RC Week 2020: Respiratory Therapists — Together We Save Lives

AARC members explain what our national week of recognition means to them

by Debbie Bunch

National Respiratory Care Week represents the profession's best opportunity of the year to tout the value that respiratory therapists bring to their organizations, their communities, and the health care system as a whole. Therapists from across the country — and indeed, around the world — use the week to host continuing education events, recognize outstanding staff members, educate the public about respiratory conditions, do good out in the wider world, and, yes, spend some quality time enjoying special breakfasts, lunches, and dinners with colleagues.

This year's RC Week — coming up October 25–31 — may look a little different in hospitals where COVID-19 cases are still high, but that doesn't mean therapists shouldn't take some time to celebrate their profession. In fact, it is even more reason to stop and reflect on all the great work that RTs have done to help combat the virus over the difficult months we have all experienced due to the pandemic.

What does RC Week mean to RTs? Five AARC members weigh in with their thoughts.

Their eyes are open

Kent L. McCain, RRT, RRT-ACCS, RRT-NPS, is president of the Oklahoma Society for Respiratory Care. He says RC Week is something all RTs can and should be proud to celebrate.

"It gives the public and others in the facility a chance to see what we do and what dedication we have," says McCain. By celebrating the week, therapists can show their colleagues and community members alike just how hard they work to care for the patients they love.

He believes the COVID-19 pandemic has given this year's RC Week a head start on that goal. The pandemic, says McCain, has opened the public's eyes to the extensive role respiratory therapists play in the health care system as a whole.

“Yes, we give breathing treatments to those who cannot breathe,” he says. “But we also use critical skills to assist those patients who cannot breathe on their own by using ventilators and other life-saving methods.”

RC Week allows therapists to acknowledge these contributions, which have too often gone unseen or unheard.

“For this Respiratory Care Week, we are truly celebrating those who have given countless hours and days unselfishly, and this is why they are called RT Heroes,” he says.

Stand up and be counted

“In our profession, it is often said that you don’t know what a respiratory therapist is until you need a respiratory therapist,” says Jenny Humes, RRT, president of the Utah Society for Respiratory Care. “This is partly true because when you cannot breathe, you learn how a respiratory therapist can help, but since we all wear scrubs, sometimes patients do not know that a respiratory therapist is helping them. They may assume it is a nurse or physician.”

She believes National Respiratory Care Week provides therapists with a designated time when they can stand up and be counted.

“Respiratory therapy is sometimes a thankless job, and I think by acknowledging us once a year we show off who we are, and we are shown that we are important to the health care system,” says Humes. “I believe it is important not only for recognition of the profession of respiratory therapy, but more importantly to show appreciation for all those respiratory therapists who work day in and day out to save lives.”

With the pandemic front and center in everyone’s mind this year, she suggests therapists could benefit from some of the same perks she’s seen physicians, nurses, and first responders receive.
“I see so many advertisements, special discounts, and thank-you's on social media for our first responders, doctors, and nurses. I would love during RC Week to see acknowledgement in the media, in the hospitals, and on all social platforms for respiratory therapists,” says Humes. “I think it would benefit us as a profession to have the world recognize us for our knowledge and skills in saving lives. A little appreciation goes a long way.”

Reaching out to the community

As manager of cardiopulmonary and the sleep center at Hillsdale Hospital in Hillsdale, MI, Valerie Boyd, RRT, believes it is important to celebrate the RT staff as well as the profession during RC Week. “It puts the spotlight on respiratory therapy and the important contribution we make to the health care team.”
Boyd also believes it’s a great opportunity to increase awareness of the profession within the community. They do that at her hospital by hosting a fundraiser for a worthy organization in their area. For the past several years, that organization has been the Trails Edge Camp for ventilator-dependent children. The staff raises money from within their ranks to create gift baskets that they then raffle off within the organization, with proceeds going to the camp.

“Kids go to this weeklong camp at no charge to their families,” says Boyd. “It provides a wonderful camp experience for the child and also provides respite for their family for a full week.” RTs are among the staff at the camp each year, and she says the whole group has really won their hearts at Hillsdale.
Boyd agrees the pandemic has jumpstarted greater recognition for RTs and believes the profession should use RC Week to keep the momentum going.

“I feel like RTs have been receiving a lot of attention through COVID-19, and we have been recognized for our contributions to the care of patients as well as the risks we take in caring for COVID-positive patients,” she says.

Driving home the value

“I feel that being a respiratory therapist is one of the most underappreciated yet most essential disciplines in the health care setting, and it is vital that we celebrate ourselves every year so that we don't forget how important we truly are to the patients we serve,” says Marren D. Culberson, CRT, from La Rabida Children’s Hospital in Chicago, IL. RC Week belongs to the profession, he continues, and it’s the perfect time to show colleagues in the hospital and members of the public the dedication and perseverance that therapists bring to the job. “It is important to keep that fresh on their minds every year, and more than likely, more often than that to be honest. We should celebrate twice a year!”
He recalls one RC Week activity at his facility that really drove home the value of the therapist.
“My favorite RC Week activity was to dismantle a ventilator circuit and has the other hospital staff attempt to put the circuit together on a ventilator” says Culberson. “The person who put it together correctly and in the fastest time got a prize.”

The game gave staff outside of RT a good look at just how complicated ventilators really are, and there weren’t many who were able to put the circuit back to together correctly. It ended up being a great bonding experience for RTs and nurses, with the latter gaining new appreciation for their colleagues in the profession.

Tremendous contributions

California Society for Respiratory Care President Wayne A. Walls, MBA, RRT, RRT-ACCS, RRT-NPS, believes RC Week is a time to recognize therapists for the tremendous contributions they make to health care. “Almost any day of the week, we are just part of the staff walking around the hospital, and nearly indistinguishable by the public from other health care professionals,” he says. “National Respiratory Care Week serves to allow RTs to step forward into the spotlight.”

He also notes that the timing of RC Week in late October every year helps boost spirits throughout the profession as it gets ready for the typical onslaught of respiratory illnesses seen in the winter. That will be true in spades this year, with the country still in the throes of a pandemic. In California they have been working to obtain official acknowledgement of the RT’s role from government leaders, beginning with their governor. As of this writing in August, they had asked for a short video or proclamation recognizing RTs, and they were also compiling a list of RTs who have gone above and beyond during the crisis and another list of those who have sadly lost their lives battling COVID-19.

“We will spotlight individuals in our weekly publication and social media platforms,” continues Walls. “The plan is to submit them to the general media for public awareness.” He and his colleagues in the state believe these efforts will help address concerns among California therapists that the profession deserves more public recognition.

The state society recently highlighted the growing use of telemedicine during the pandemic in its *Pneusbrief* newsletter as well, and believes COVID-19 may serve as another reason to support RT reimbursement for the use of this technology in the care of patients.

Planning guide available

Regardless of how you mark National Respiratory Care Week this year, one thing remains clear: respiratory therapists are on the front lines and always have been, and they deserve the respect of everyone in their facilities and everyone in their communities as they continue to care for patients with COVID-19 and other respiratory conditions. That mindset plays right into the AARC's theme for this year's RC Week: "Respiratory Therapists — Together We Save Lives." For more information on RC Week 2020 and to download our Planning Guide, visit our Respiratory Care Week page on AARC.Org.

Ready to retire

by Richard M. Ford, BS, RRT FAARC

Retiring was not an easy decision. I loved what I did — I had a remarkable staff and a progressive department, and I found immense satisfaction in making ongoing contributions to the respiratory care profession. While the time had come for me to retire as the director of respiratory services, I also wanted to stay engaged and apply some of the expertise I had gained over the past 45 years. Retiring would afford me the opportunity to enjoy my family, travel, be a grandpa, play music, and live a life of less stress, but it would also allow the time to do some of the things I wanted to do professionally but struggled to find the time. It's important to know that the skills you acquire in treating patients, in managing a department, in navigating change, and in serving as a leader are valuable and sought-after qualities regardless of your work status. Retirement provided me the opportunity to pick and choose what to do with my time.

Opportunities

My first opportunity came before I could leave the doors of the University of California San Diego Health. Prior to my last day of work, my administrator told me she had an interesting proposal for me to consider. They were looking for an individual who could assist them in the opening of a new hospital. Considering I had assisted in planning the facility over the prior five years, I jumped at the chance to help get it open. I was designated the co-chair of the Move Committee, a 50% position that lasted 18 months. My strengths in that capacity were the organizational and team-building skills acquired as the director of respiratory care. I was able to successfully apply those skills in building teams, establishing plans, and coordinating the transition of patients from one site to the other. UCSD Jacobs Medical Center opened early in 2017, and I drive past it nearly every week with a sense of pride in playing a critical role in getting the facility operational and ready for patients. In opening the new hospital, I was part of a team that made sure the new facility would uniquely serve the needs of patients in San Diego and from around the world. I did not realize, however, that I would soon be one of those patients.

Other opportunities also presented themselves after retiring. While serving as a respiratory care manager over the years, I had done a number of consulting jobs, primarily regarding how to structure and staff a respiratory care department efficiently. Again, taking skills learned from 45 years on the job, including the ideas of many AARC colleagues much smarter than me, I put together a program to share and implement such improvements elsewhere. Although I have since also retired from consulting work, I

still find the time to serve as an advisor on a variety of projects that range from working with the California Respiratory Care Society on staffing guidelines to helping the AARC with the benchmarking program and developing the Sixth Edition Uniform Reporting Manual. For those who retire but want to stay engaged in supporting the profession, there are numerous opportunities to get involved. I've never had anyone turn me down to serve as a volunteer, and I've also managed to make some extra money along the way. While the demands of managing clinical services can compete with time to volunteer for programs and projects, retirement can provide additional time to serve with a lot less stress. Such work remains highly rewarding, and I'm not alone in feeling this way. I am proud to be just one of many retired respiratory therapists who enjoy ongoing service to the profession.

Experiencing the impact of your decisions

Retirement does bring with it some new health challenges. Having the time to travel and take part in different activities can create some risk as you attempt to do the things you did when you were 20, and getting older can also take its toll. When I retired, I elected to get my health care through UC San Diego, so now I was on the receiving end of the facilities and systems I helped implement over the years. Being on the receiving end of those services, I was impressed . . . not by decisions I had made, but by the quality of care made possible by listening to staff and team members as we developed best practices and evidence-based programs to better serve patients.

I also managed Occupational Health and spent months redesigning the office complex in a new building, which included exam rooms, patient waiting rooms, reception areas, and staff offices. Just a few months before moving in, the Medical Center decided to redesignate the space for a highly specialized and new service for swallowing and speech disorders. While disappointed at the time, I had no idea I would be a patient in that clinic. In May 2020, I was experiencing some minor difficulty swallowing and speaking. I remembered the clinic and the physician director who was awarded that space, so I got an immediate referral. After an extensive workup, it was discovered that I had a carotid artery aneurism that was pressing on my hypoglossal nerve, which was causing the issues with swallowing. Considering the possible devastating impact of a carotid hemorrhage, I was referred to neurosurgery, a group I was also engaged with while employed at UCSD. I worked side by side with neurosurgeons in the ICU as a therapist, worked up treatment protocols as a coordinator in the surgical ICU, and, as a manager who also managed the neurology team, ensured we had the staff and equipment to meet the needs of their programs. Once referred, surgery was going to be the only reasonable option to consider, so we opted for endovascular repair. I arrived, made it through the COVID-19 screening, checked in at a kiosk, and got settled in a waiting area. As an employee of the facility, I had served on the team that designed those system; as I got situated in pre-op, I looked up at the power towers for oxygen, air, and suction, the very same power and rack systems that an associate and I had worked with architects and contractors to build. I ended up in the same surgical facilities that I had spent weeks developing, building, and showing to the neurosurgery team. After the procedure, I ended up in the neurosurgery ICU, another space and set of systems that I had participated in designing. In the end, my surgery went well, and the aneurysm was repaired without complications.

Pay it forward

It was a unique experience to not only be a patient, but a patient in a health system from which I had retired and from which I required services in the physical space and the systems that I helped design. Needless to say, such an experience gives you a totally new perspective of what is important and meaningful as a patient. In creating spaces and systems to provide patient care at UCSD, decisions were made from a patient's point of view, including patients serving on the design teams. I can say that such an approach works. However, more than just the facilities, spaces, systems, and equipment, I was impressed with the people. During my stay I received services that involved respiratory care, medical staff, nursing,

nutritional services, physical therapy, imaging, neuro techs, anesthesia, speech therapy, pharmacy, lab techs, and many others. Over my career there has never been a doubt in my mind that it is the people we lead that ultimately make the difference. That includes everything from training, competence, customer service, to our ability to justify such resources and give them the tools needed to provide great care. My personal experience as a patient not only reassured me that we can and do make a meaningful difference in the lives of patients and their families, but that those long days of frustration and stress in trying to get the right things done right paid off. I have a tremendous sense of pride and gratitude that such systems worked to give me a new chance at living a full life, as well as the opportunity to continue making a difference in my retirement years. I hope others keep that focus and become even more aware of the difference they can make, even in retirement.!

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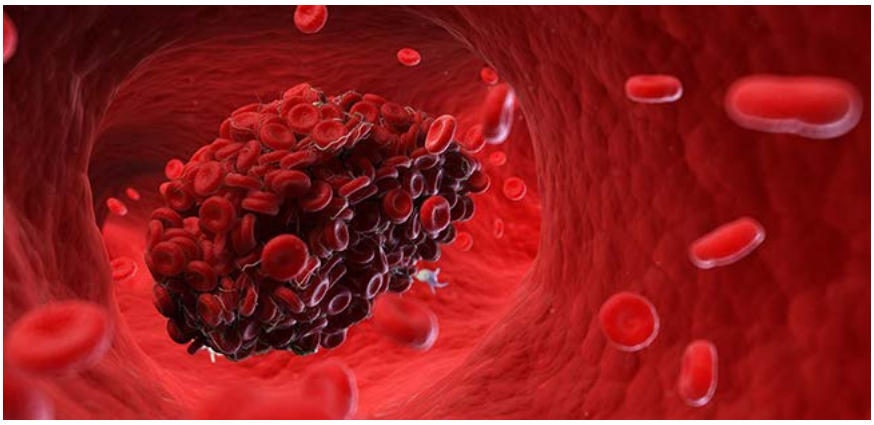
RC Currents

IN THE NEWS



Blood Clotting Biomarker Identified

Researchers from the Yale Cancer Center have identified a biomarker associated with blood clotting in patients with COVID-19. The study was conducted in 48 patients who were in the ICU and another 20 receiving care on a non-ICU hospital unit, along with 13 disease-free volunteers who served as controls. An analysis of blood samples taken from the subjects revealed that several markers of endothelial cell and blood platelet activation were about twice as high in the ICU group than in the non-ICU group, and also higher in the non-ICU group than in the control group.

One of those biomarkers, a soluble form of a protein on the surface of endothelial cells called thrombomodulin, was highly correlated with survival among all patients with COVID-19, leading the authors to conclude that measuring thrombomodulin levels might aid in managing patients.

“If we have a marker to identify which patients are most likely to progress towards critical illness and possibly death, that would be hugely helpful, as these patients might benefit from closer monitoring and possibly earlier intervention,” said study author Alfred Lee, MD, PhD. The study was published by *The Lancet Haematology* in June.

MIS-C in Children

Two papers published in *The New England Journal of Medicine* in June shed new light on factors associated with multiple inflammatory syndrome (MIS-C), the newly identified condition related to COVID-19 diagnosis or exposure in children.

A CDC-funded study analyzed clinical characteristics and outcomes for 186 children from around the country and another 27 from New York State who were impacted by MIS-C from March 16 to May 20. The researchers found —

• Symptoms of the disease typically appeared two to four weeks after the onset of COVID-19 or after exposure to the SARS-CoV-2 virus.
• Among the children confirmed to have had COVID-19, the median time in which inflammatory symptoms appeared was 25 days.

• More than two thirds of the children and adolescents were healthy before their experience with SARS-CoV-2, and nearly four in five hospitalized with MIS-C required ICU care.

• More than two thirds of the children in the study were over the age of five.

• As of May 20, 70% had been discharged, 28% were still hospitalized, and 2% had died.

The researchers also noted important differences between MIS-C and Kawasaki disease, which has similar characteristics, including the fact that MIS-C typically occurs in an older population and is more likely to involve the heart and digestive system. Heart symptoms are more severe as well.
A study led by the New York State Department of Health described 99 cases of MIS-C. Results showed —

• 36 of the children had a pre-existing condition, the most common being obesity.

• The peak in the number of MIS-C cases followed the peak in the number of laboratory-confirmed pediatric COVID-19 cases by 31 days. Both conditions were relatively uncommon in children.

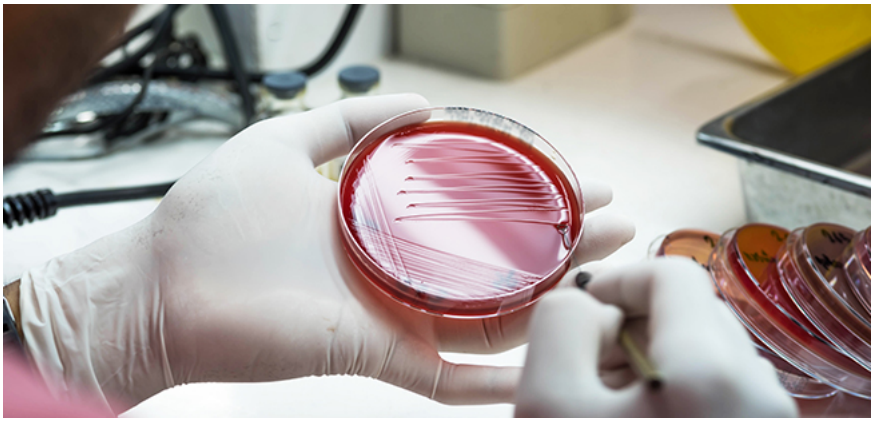
• The emergence of the condition in New York State followed widespread COVID-19 transmission and often was associated with cardiac dysfunction.

• Of the 99 children in the study, there were two fatalities.

• Among 78 patients with data on race, 37% were white, 40% were African-American, 5% were Asian, and 18% were of another race.

• Among 85 patients with data on ethnicity, 36% were Hispanic.

In this study, Kawasaki-like symptoms were more common in younger children than in adolescents. The authors suggest more research is needed to find out whether a post-SARS-CoV-2 inflammatory syndrome exists in adults as well.



New Tool in the Battle Against Antibiotic Resistance

Antibiotic resistance continues to be a problem worldwide. Investigators from the University of Exeter have developed a miniaturized device capable of quickly examining whether the fluorescent qualities of an antibiotic are taken up by the bacteria the antibiotic is intended to eliminate. So far, the team has tested the technique in the antibiotic ofloxacin, which glows fluorescent under ultraviolet light. Bacteria then glow as well when the antibiotic is taken up. If the bacteria remain dark, that means they have not been taken up and the antibiotic has no chance of working.

"We're really excited about the potential for this technique to make a meaningful reduction in prescribing, helping to fight the global threat of antibiotic resistance," said study author Dr. Stefano Pagliara. "Our technique could reduce the use of multiple antibiotics to try and fight a bacterial infection." The study was published by *Lab on a Chip* last summer.

Air Pollution and ILDs

More research is needed to reveal the role air pollution plays in the development of interstitial lung diseases (ILDs), find researchers from the University of Pittsburgh who reviewed prior studies on the topic. In one study conducted among healthy people, for example, the investigators found long-term exposure to nitrogen dioxide increased the odds of developing interstitial lung abnormalities (ILA). In

another study in healthy individuals, long-term exposure to elemental carbon increased the chances of both developing ILA and progression of ILA.

“It is imperative that physicians and scientists dive into the mechanistic underpinnings associating air pollution with chronic disease,” said study author Gillian C. Goobie, MD. “This is especially important in chronic diseases with high mortality and unclear pathophysiology, such as ILDs, where pollution exposure may play a significant role in disease development and progression.” The study was published in a recent edition of the *American Journal of Respiratory and Critical Care Medicine*.

Homeless People More Likely to Need Mechanical Ventilation

According to researchers from UCLA, Harvard Medical School, and the University of Tokyo, homeless people who develop respiratory infections are more likely to be placed on a ventilator than those who are not homeless. The finding came from a review of 20,000 patients who were hospitalized for influenza in 214 hospitals in New York between 2007 and 2012. Overall, 6.4% were homeless, and these homeless patients were 58% more likely to receive mechanical ventilation.
Other results from the study showed —

• Nearly all the homeless people were seen in just 10 hospitals.

• The gap between homeless and non-homeless hospitalizations was particularly wide during 2009’s H1N1 influenza pandemic, when 2.9 out of every 1,000 homeless people in New York were hospitalized, compared with 0.1 per 1,000 non-homeless people in the state.

• Homeless patients with influenza were 9% more likely to be admitted to the hospital from the emergency department.

• There was no difference in in-hospital fatality rates between the two groups.
The study was published in a recent edition of the Journal of General Internal Medicine.

ED Visits, Hospitalizations for Pediatric Asthma Drop During Pandemic

The COVID-19 pandemic has had far reaching effects. Here's another to add to the list: far fewer emergency department (ED) visits and hospitalizations for pediatric asthma.

This finding comes from researchers at the Children's Hospital of Philadelphia who tracked ED visits after the March 19 stay-at-home order was issued for Philadephia. Prior to the pandemic, their ED was seeing an average of 24 patients per day for asthma treatment, a figure on par with those seen in the previous four years. After March 19, the average dropped to fewer than six patients per day. The percentage of children visiting the ED for asthma who were subsequently hospitalized went from 31% to just 22%.

The authors believe these results indicate a need to study the impact that person-to-person transmission of respiratory viruses has on asthma symptoms, outdoor seasonal vs. indoor allergens, and traffic and industrial pollution. "The COVID-19 pandemic and associated policies have had a dramatic impact on the number of patients we are seeing in the ED with asthma exacerbations," said study author Chén C. Kenyon, MD, MSHP. "These results may offer new insights on where to best focus efforts to improve asthma outcomes outside of a pandemic scenario." The study appears in *JACI in Practice* last summer.

Developmental Disabilities Up Asthma Risk in Kids

New research out of the University of Texas Health Science Center suggests children with developmental disabilities or delay are more likely to also suffer from asthma. The study was based on data from the 2016–2017 National Survey of Children's Health and included information from 71,811 families with kids age 18 and under.

Results showed a significantly higher prevalence of asthma in children who were identified by their families as having one or more developmental problems. Asthma was most likely to occur in children with hearing loss, followed by those with cerebral palsy and those with a learning disability. Children who had a developmental disability and were from an ethnic minority were more likely to have asthma when compared to their white peers.

"These results support advising pediatricians to screen for asthma in children with disabilities, so that interventions can be started sooner," said study author George Delclos, MD, MPH. "This screening is particularly important to conduct in ethnic minorities with disabilities, given their even greater risk." The study was published in *JAMA Network Open* in June.

Anaphylactic Shock Preventative May Be on the Horizon

Scientists at Northwestern Medicine believe drugs known as BTK inhibitors may be able to thwart the development of anaphylactic shock in people with allergies. They decided to target BTK inhibitors because the BTK protein must be present in mast cells for those cells to release histamine and other allergic mediators in response to an allergen.

The team tested three different BTK inhibitors for their ability to block allergic reactions in human mast cells in a test tube and found the reactions could be blocked. From there, they tried an FDA-approved oral BTK inhibitor drug in a new "humanized" mouse model of anaphylaxis and found it also successfully reduced or prevented allergic reactions, including severe, life-threatening anaphylactic reactions. The mouse's organs contained transplanted human cells that, over several months, matured into human mast cells, the primary cells that react during allergic reactions.

"This pill could quite literally be life-changing and life-saving," said study author Dr. Bruce Bochner. "Imagine being able to take medication proactively to prevent a serious allergic reaction." The research appeared in a recent edition of the *Journal of Clinical Investigation*.

The Bed Bug Burden

Investigators from Massachusetts and Illinois have confirmed what respiratory therapists and other health care providers have long suspected: bed bugs are significantly more common in low-income, multifamily housing units.

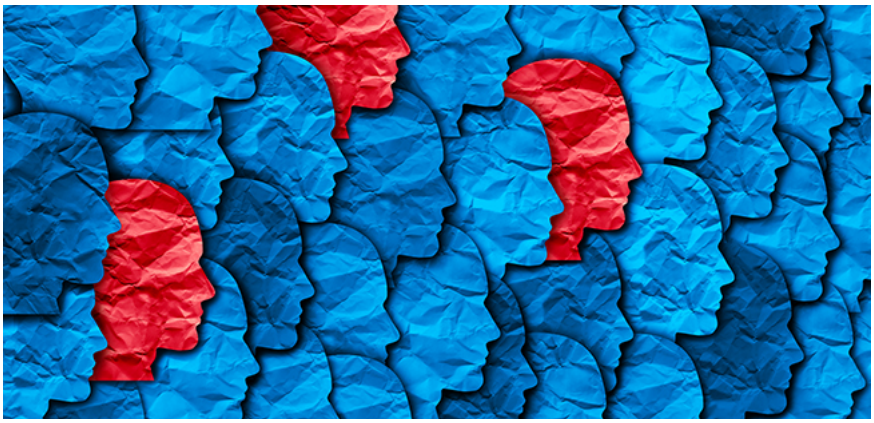
The study used administrative data on 56,384 periodic inspections conducted by the Department of Buildings in Chicago, IL, from 2006 to 2018. Among that group, 491 resulted in definitive evidence of a bed bug code violation. From there, the researchers aggregated the number of inspections and violations

from each year at the census-tract level and derived socioeconomic measures of each tract. The final analysis showed that neighborhood-level median household income was the strongest predictor of bed bug prevalence. Bed bugs were also more common in neighborhoods where evictions were common and in those that were more crowded. The study appeared in the open-access journal *People and Nature* last summer.

Elastomeric Masks May Sub for N95s

Could masks typically used in industrial and construction settings help solve the shortage of N95 respirators in health care? Researchers who tested the masks believe the answer may be yes. Reusable elastomeric respirator masks resemble gas masks and are made of a tight-fitting, flexible, rubber-like material that can adjust to the faces of nearly everyone. They use a replaceable P100-rated cartridge filter and, according to the CDC, offer equal or better protection from airborne infectious substances as the N95. In this study, carried out by the Pittsburgh-based Allegheny Health Network, nearly 2,000 health care providers were fitted for the mask and 94% were deemed able to wear it. After a month of use, no one wearing an elastomeric mask chose to return to an N95 mask. "Our clinicians were very comfortable with the fit, knowing it was an equivalent if not superior amount of protection, and that these masks were intended to be reused," said study author Sricharan Chalikonda, MD, MHA, FACS.

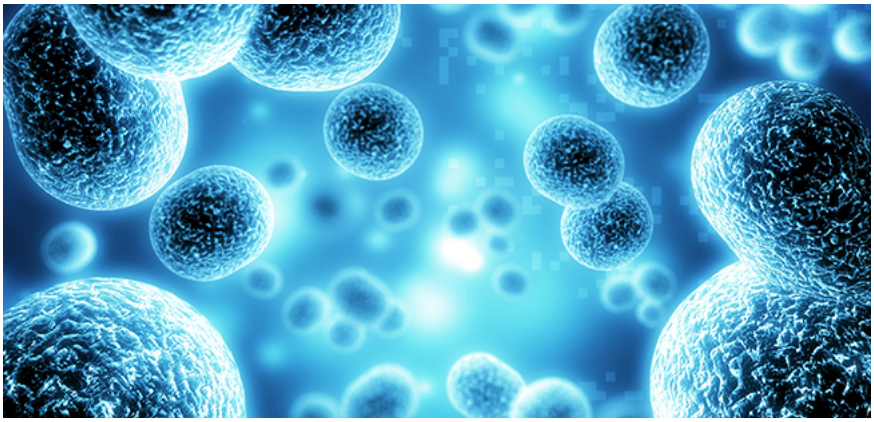
The study was published by the Journal of the *American College of Surgeons* in June.



Herd Immunity Model

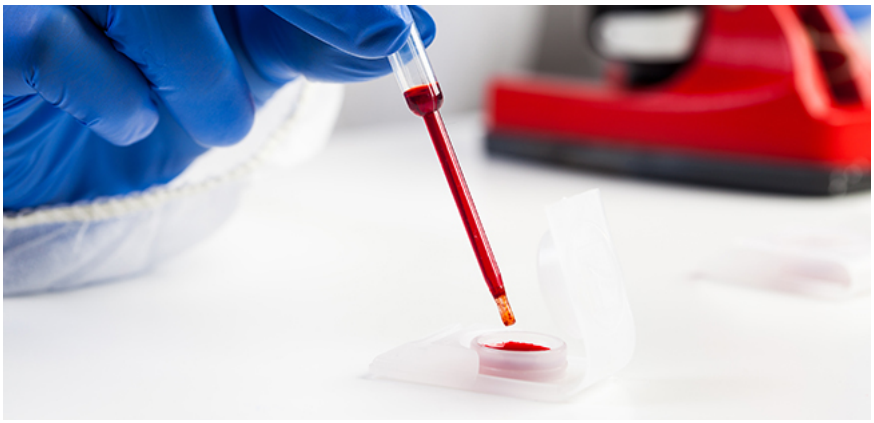
What will it take to reach herd immunity to SARS-CoV-2? Conventional wisdom says 60% of the population. Researchers from the University of Nottingham and University of Stockholm believe that's only correct if you are talking about immunity derived from vaccination. When they devised a mathematical model to determine herd immunity from the spread of the disease that takes age and social

activity level into account, they found the herd immunity level dropped from 60% to 43%. “The more socially active individuals are, then the more likely they are to get infected than less socially active ones, and they are also more likely to infect people if they become infected,” said study author Frank Ball, from the University of Nottingham. “Consequently, the herd immunity level is lower when immunity is caused by disease spreading than when immunity comes from vaccination.” The study was published by *Science* last summer.



Disarming Deadly Bacteria

A new vaccination strategy developed by investigators from the NYU Grossman School of Medicine may one day protect against deadly bacterial infections such as MRSA. The strategy targets toxic molecules released by all Staphylococcal bacteria rather than the bacteria itself. These toxic molecules, called leukocidins, kill the immune cells known as leukocytes, which are necessary for the immune system to fight infection. When the researchers tested the vaccine on mice, 70% survived infections. None of the mice in the control group survived. “Our study provides a roadmap for developing an effective vaccine against all Staphylococcal infections, especially MRSA,” said senior investigator Victor J. Torres, PhD, from NYU Langone, where the study was conducted. “This strategy is based on maximum disarmament of the bacterium’s ability to kill all types of immune system cells.” The study was published in the *Journal of Experimental Medicine*.



Convalescent Plasma Safety Report

A safety report from the FDA’s Expanded Access Program (EAP) for COVID-19 that was issued in June offers additional insights into the use of investigational convalescent plasma in COVID-19 patients. Among the findings —

• The treatment was studied in 20,000 hospitalized patients who were deemed at risk of progressing to a severe or life-threatening condition.
• Nearly 40% of the patients were women, 20% were African-American, nearly 35% were Hispanic, and 5% were Asian.

• Seven-day mortality rates declined to 8.6% compared to 12% in a previous safety study of the first 5,000 transfused patients.

• Serious adverse events continued to be less than 1%.

"Our efforts to understand convalescent plasma continue," says Michael Joyner, MD, principal investigator of the EAP at the Mayo Clinic and lead author of the article. "We're optimistic but must remain objective as we assess increasing amounts of data." He and his fellow authors caution that the decline in mortality alone does not provide any evidence on the effectiveness of convalescent plasma for treating COVID-19. Given the accelerating use of the therapy, they say research is now broadening its focus to determine indicators of efficacy. The report appeared in the *Mayo Clinic Proceedings*.

Wildfire Smoke Delivers Immediate Harm

Wildfire smoke has an almost immediate impact on the respiratory and cardiovascular systems, report researchers from the University of British Columbia who used statistical modeling to evaluate the relationship between ambulance dispatches, paramedic assessments, and hospital admissions related to respiratory, circulatory, and diabetic conditions with levels of fine particulate matter during wildfire seasons in British Columbia from 2010 to 2015. Results showed that exposure to elevated levels of fine particulate matter was associated with increased odds of ambulance dispatches related to respiratory and cardiovascular conditions, with increased ambulance dispatches occurring within just one hour after exposure. Among people with diabetes, the odds of health complications increased within 48 hours following exposure to wildfire smoke. The study appeared in a recent edition of *Environmental Health Perspectives*.

New Allergy Pathway

How do dust mites trigger asthma and allergies? Researchers from the Johns Hopkins Bloomberg School of Public Health have identified the sequence of molecular events that make it happen. In a study published in *Nature Immunology* in June, they explained the role played by an immune protein called SAA1, illustrating how it interacts with allergy-triggering molecules from dust mites to trigger an allergic-type immune response in mice. Blocking this newly discovered pathway may provide a new treatment strategy for people with asthma and allergies. "We think that the signaling interactions that occur immediately downstream of the mite-proteins' activation of SAA1 may be good targets for future drugs," said senior author Marsha Wills-Karp, PhD.

MMR for COVID-19?

The measles, mumps, and rubella (MMR) vaccine may dampen the septic inflammation associated with COVID-19 infection, find researchers from Louisiana State University (LSU) and Tulane University. They base that speculation on laboratory studies showing that vaccination with a live attenuated fungal strain induced trained innate protection against lethal polymicrobial sepsis. The protection was mediated by long-lived myeloid-derived suppressor cells (MDSCs), which have previously been reported to inhibit septic inflammation and mortality in experimental models.

The researchers say that an MMR vaccine, which is a live attenuated vaccine, should be able to induce MDSCs that can inhibit or reduce the severe lung inflammation/sepsis associated with COVID-19. They believe the MMR may even be why children, who routinely receive the vaccine, are significantly less likely to have severe COVID-19.

A clinical trial will be necessary to confirm their speculations, but in the meantime they believe all adults, including health care workers and people in nursing homes, should get the MMR vaccine. "While the

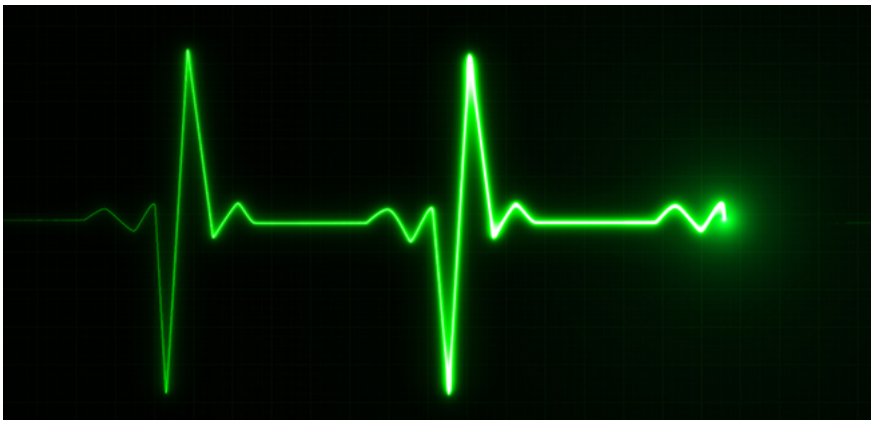
MDSCs are long-lived, they are not life-long cells. So, a booster MMR would enhance the antibodies to measles, mumps, and rubella and reinitiate the MDSCs," said study author Dr. Paul Fidel, Jr., from LSU. "We would hope that the MDSCs induced by the MMR would have a fairly good lifespan to get through the critical time of the pandemic."

Improving Lung Cancer Screening

Early screening for lung cancer saves lives, but the low-dose computed tomography (CT) technology currently used for that screening has its limitations, such as overdiagnosis of slow-growing cancers that may never result in harm to the patient. Researchers from the Moffitt Cancer Center believe radiomics, which extracts noninvasive biomarkers from medical imaging, can improve the screening process.

Using data from the National Lung Screening Trial (NLST), a study comparing two lung-cancer screening methods — low-dose CT and standard chest radiography — they generated radiomic features from NLST participants who were diagnosed with lung cancer during their screening. From there, the researchers were able to develop a model that can identify a vulnerable group of screen-detected, early-stage lung cancer patients who are at high risk of poor survival outcomes. Specifically, the model uses two radiomic features, one peritumoral and one intratumoral, to stratify patients into three risk groups — low, intermediate, and high. The high-risk patients may have more aggressive cancer that, while caught early, could still require frequent follow up or adjuvant therapy.

"Identifying predictive biomarkers that detect aggressive cancers or those that may be slow developing and non-emergent are a critical unmet need in the lung cancer screening setting," said study author Matthew Schabath, PhD. "Additional research is needed to inform us on the potential translational implications of this model, but it could make a major impact on saving lives by identifying lung cancer patients with aggressive disease while also sparing others from unnecessary therapy." The study was published in *Nature Scientific Reports* in June.



Spillover Effect

Deaths have risen markedly in the United States since the beginning of the COVID-19 pandemic, but COVID-19 is not responsible for all of them, report researchers from Virginia Commonwealth University (VCU) and Yale University publishing in a recent edition of **JAMA**. Their analysis of excess deaths between March 1 and April 25 attributes 65% to COVID-19. The remaining third were caused by other factors. In 14 states, including California and Texas, more than half of the excess deaths during this time period were attributed to other causes.

The authors note some of this excess could be due to undercounting of COVID-19 deaths or because people with COVID-19 died from related complications, such as heart disease, and those related complications were listed as the cause of death. But they worry that much of the excess might be due to people avoiding needed medical care during the pandemic. Overall, their research showed —

• Deaths from causes other than COVID-19 rose sharply in the five states that had the most COVID-19 deaths in March and April (ie, Massachusetts, Michigan, New Jersey, New York, and Pennsylvania).

• At COVID-19's peak for March and April (the week ending April 11), diabetes deaths in those five states rose 96% above the expected number of deaths when compared to the weekly averages in January and February of 2020.

• Deaths from heart disease, Alzheimer's disease, and stroke also spiked in those states, rising by 89%, 64%, and 35%, respectively.

• Death rates rose a staggering 398% from heart disease and 356% from diabetes in New York City alone. "People who never had the virus may have died from other causes because of the spillover effects of the pandemic," said study author Steven Woolf, MD, from VCU.

Contribute to the AARC "Transitions" Column

The AARC "Transitions" column is devoted to sharing news about the passing of AARC members. Submit news about your colleagues' recent passing using our Transitions online form. Please provide any information about the member's recent death, such as an obituary, so that we can share it with our members and pay tribute.

Tell Your Story

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

Resilience, commitment, kindness, balance, and respect.

by Karen S. Schell, AARC President, DHSc, RRT, RRT-NPS, RRT-SDS, RPFT, RPSGT, AE-C, CTTS

"We rise by lifting others."—Robert Ingersoll

Recently I heard a piece on National Public Radio about a mailman in Puerto Rico. He gave an inspiring message when he spoke to graduating seniors about his lessons in life, including words of wisdom on resilience, commitment, kindness, and balance. I include respect as a valuable lesson as well.

Resilience

Resilience is the psychological quality that can overcome adversities of life to come back at least as strong as before. Highly resilient people find a way to change course, heal emotionally, and continue to move forward rather than letting difficulties, events, or failure overcome them and drain their resolve. Respiratory therapists have qualities that make them more resilient, such as a positive attitude, optimism, emotion regulation, and seeing failure as form of helpful feedback. It is commonplace in human nature to fail; everyone, no matter their background, skill set, or life story, will fail at least once in life. It doesn't mean the setback is fun or easy. But learning to be okay with making mistakes is a critical skill tied to resilience and future success. Any crisis, such as the coronavirus pandemic, can test resilience. Optimism, looking to loved ones for help and emotional support, taking care oneself, and focusing on what you can control can help. Staying positive helps you be resilient, not only for your sake but for the sake of others around you. It is part of being a respiratory therapist — we can recover quickly from difficult situations and move forward. Ask yourself, "How do I become more resilient?"

Commitment

No gray area — either you are committed, or you are not. Without commitment, our intentions are merely a "wish list." The weak language of "try," "could," or "should" has no value associated with it. Intentions with no movement or activity is not commitment. When individuals do not follow through with commitment, it is usually due to self-mismanagement and a lack of organization, preparation, and planning. Often commitment fails due to a lack of personal discipline, not being willing to give the time and energy required to do what needs to be done to keep promises and meet goals. Commitment is about doing what is right. Every time a commitment is broken, we diminish our personal power, character, and integrity. Respiratory therapists are committed to our profession and, most of all, to our patients. Ask

yourself, “Am I willing to make the commitment to do what it takes to turn my intentions into my reality by spending my time, energy, and effort?”

Kindness

A quote by Emelia Earhart says it all: “A single act of kindness throws out roots in all directions, and the roots spring up and make new trees.” A small hello with a smile, a considerate act for someone else, sharing enthusiasm — these seemingly small gestures can provide comfort to another person who just might need an act of kindness. Respiratory therapists are kind. Ask yourself, “What can I do to make today a more pleasant day for someone else?”

Balance

A balanced life means different things to different people. When we are out of balance, we can often see it reflected in some way in our health or our lifestyle. We don’t eat properly; we don’t sleep enough; we have no time for play, family, or friends; or we feel depressed. Even for those of us where our job is our passion, or to consider our job as work, we still need to be in balance with ourselves. Balance can come in many forms — whether it’s the balance of work and play, activity and relaxation, happy and sad, there is an opposite to everything. It has been said that you can’t love without hate. We need to know the opposite of something to appreciate that thing, and finding this balance in all areas of our lives leaves us feeling, well, balanced! This is probably one of our greatest weaknesses as respiratory therapists. We care about our patients, we are passionate about our job and patients, and we love the profession! Our individual definition of balance may be different, but the only thing that is certain is that life is always in motion. Change can happen at any time, and sometimes we must modify our own balance in the face of that change, as we have done during this pandemic. With so much to do and often little time to do it, we have to change our balance to be able to cope. Ask yourself, “How do I learn to be more balanced?”

Respect

Respect means that you accept somebody for who they are, even when they are different from you and you don’t agree with them. Respect builds feelings of trust, safety, and well-being. Receiving respect from others helps us feel safe and able to express ourselves. Look for the unique talents of each person you meet, and have the respect to have an open mind and to appreciate each person’s contributions to this world. Respect strengthens our relationships in our community. There are five easy ways to show respect and gratitude. Listen, encourage, congratulate, be helpful, and say thank you. We often overlook opportunities to thank and compliment people around us. Take the time to show appreciation and gratitude. It makes the other person feel better and can lift you up as well. The more we show respect, the more we are respected. A quote by Thomas Paine puts respect into perspective: “Give to every other human being every right that you claim for yourself.” Ask yourself, “Am I ready to listen, encourage, congratulate, be helpful, and say thank you?”

I will end with a quote from Maya Angelou: “Do the best you can until you know better. Then when you know better, do better.”

Ask yourself, “Am I ready to do better?”

about the author…

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Cancel Culture

by Anthony L. DeWitt, JD, RRT, FAARC

As lawyers, we say it all the time: health care organizations are "risk averse." They do not like risk takers, and they tend to weed out those who take needless risks. A hospital is supposed to be a safe zone for every patient. It should never matter to a clinician what color, gender, religion, or political affiliation a person is when they come to the hospital. And I've met only a few — most of whom are now former clinicians — to whom it did matter. No one's illness or injury has a race, gender, or political affiliation. And that's what a clinician is there to work on.

In the media you have likely heard people talking about "cancel culture." Cancel culture happens like this. Someone says something online. Someone else doesn't like it, and the person who doesn't like it recruits others to complain to the employer of the transgressing employee.

As an example, Joan is a Libertarian. She believes in a radically limited government. She doesn't think her taxes should be used to build armies or protect other countries. But, like every other clinician, other than in an occasional conversation with people she knows and trusts, she never says a word of this at work. She never talks politics at work.

But as @JoanD'Libertie on Twitter (a made-up name) she extolls the virtues of her political beliefs with abandon, and, like many people on Twitter, sometimes goes a little bit too far in making a point. She never uses her real name. She never mentions her hospital. She never says what she does for a living. She takes great pains to protect her privacy. She feels safe being honest about her views.

Phil, whose father is on the board of the hospital and who runs a defense company that depends on government contracts, is a bit of a hacker. He is interested in some of the comments made by Joan because they conflict with his personal political beliefs, and he "doxes" her by finding out her real name, address, and employer. People drop breadcrumbs on their Twitter and other social media feeds every day, and all it takes is some diligence to figure out who someone really is. He takes four of her more outrageous posts to his father and says, "This woman is trying to kill your company!"

Phil's father is outraged! He immediately calls the hospital CEO and says he won't contribute another dime if Joan isn't gone by morning. The hospital has an angry board member, and the board controls who administers the hospital. Between standing up for free expression and keeping a board member happy,

the CEO does not see the choice as a difficult one. Joan is fired, but not for something she did; she's fired, truthfully, for what she believes. It's odious, but it happens every day in every industry.

In an employment-at-will state, and without union protection, Joan can't even sue for wrongful termination. An employer can fire you for any reason, or for no reason, but not for an unlawful reason. And while she might have a First Amendment right to speak her mind at a state-owned hospital, private employers are not governed by the First Amendment.

Cancel culture is a poisonous form of retaliation against political thoughts. It is used against people of every political affiliation. And every time it is used against a person, it further erodes our ability to engage in civil discourse. It is the antithesis of free expression.

In some states, Joan might (and I emphasize might) have a cause of action for invasion of privacy or publication of private facts. Publication of private facts laws protect your right to privacy. Publicizing facts about a person's online commentary whose identify is purposefully shielded from the public by a made-up name is a violation, in most cases, of the terms of service of organizations like Twitter and Facebook, and it is quite possibly actionable. While state laws vary, the things a plaintiff must prove to win are that:

• the defendant publicized a matter regarding the private life or information of the plaintiff;

• the publicized matter would be highly offensive to a reasonable person in the position of the plaintiff;

• it is not of legitimate concern to the public; and

• as a result of the publication, someone suffered legal damages.

Often a person exposed by doxing is exposed publicly with a user posting information online connecting the person's online identity to their private identity, and then asking others to make trouble for her with her employer. People take perverse pleasure in doing this. Recently a woman walking a dog was identified because she acted in a racially insensitive manner and was filmed while doing so. She was fired by her employer. She likely has no recourse because a person in a public place has no expectation of privacy. And her views likely brought shame on her employer. No employer should ever tolerate racism. It must have no place in the United States of America.

While remedies exist for people who are exposed by people being doxed, the better approach is not to expose oneself in the first place. There are far more people likely to be offended by what you say online than are likely to be receptive to it. It is also fairly unlikely that you'll convince someone else that you're right in 256 characters. Even posts on Facebook carry significant risks for employment action.

When hospital patients with strong opinions express them, it's tempting, sometimes, to disagree. Don't do it. That never works out well for an employee. Instead simply smile and nod and say how interesting their views are. When asked what your view is, tell them you're uncertain and are studying the matter. You do not have to tell them they're full of beans, even if they are. Instead, deflect, parry, and tell them you're certainly impressed by their arguments. You don't have to tell them you're not favorably impressed.
The best way not to get canceled by cancel culture is not to say or write anything that will get you canceled. I have never regretted not sending an email, but the converse is not true.

about the author…

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Industry Watch

FDA clears IND for COVID-19 treatment

According to EMD Serono, the FDA has cleared its investigational new drug application (IND) for M5049 for the treatment of patients with COVID-19 pneumonia. The company will initiate a Phase 2 randomized controlled clinical study evaluating the safety and efficacy of M5049 in this patient population. M5049 is a potentially first-in-class small molecule that blocks the activation of Toll-like receptor-7 (TLR7) and TLR8, two innate immune sensors that detect single-stranded RNA (ssRNA) from viruses such as SARS-CoV-2. Activation of TLR7/8 leads to immune cell activation and inflammation, which can cause severe immunopathology when not properly controlled. The aim of the study is to investigate whether M5049 intervention at a critical point in the course of COVID-19 disease may prevent or ameliorate the hyperinflammatory response in patients with COVID-19 pneumonia and prevent progression to the cytokine storm.

Aerosol-based inhalable nicotine-replacement therapy

Respira Technologies, Inc., is planning to apply to the FDA for its RespiRx inhalable drug-delivery platform, the first true aerosol-based inhalable nicotine-replacement therapy (NRT) in the U.S. The platform uses a proprietary vibrating mesh function to create an easily inhalable aerosol without the use of any heat, thus delivering a medical-grade, precisely measured nicotine dose to smokers without the harmful or potentially harmful constituents that are present in current heat-based vaporization platforms like e-cigarettes. "We believe the RespiRx is perfectly suited to help the 50% of smokers in America who want to quit but can't, due to the presently ineffective NRT products offered to them," said Respira CEO and founder Mario Danek.

Theravance launches study in COVID-19 patients

According to Theravance Biopharma, Inc., the first COVID-19 patient has been dosed in a Phase 2 study of TD-0903, a lung-selective, nebulized Janus kinase inhibitor (JAKi) in development for the potential treatment of hospitalized patients with acute lung injury caused by COVID-19. The company believes TD-0903 has the potential to inhibit the cytokine storm associated with acute lung injury and to prevent progression to ARDS. The initiation of the Phase 2 study in patients in the UK followed the successful completion of dosing in the Phase 1 study in healthy volunteers at the same clinical unit in the UK, allowing for a rapid transition to Phase 2.

FDA approves pre-filled Dupixent pen

The FDA has approved a 300-mg, single-dose, pre-filled pen for Dupixent (dupilumab). The pre-filled pen is approved for all Dupixent indications in patients aged 12 years and older, which includes use in certain patients with atopic dermatitis, asthma, and chronic rhinosinusitis with nasal polyposis, for at-home administration. The pre-filled pen is expected provide patients with a more convenient option for administering Dupixent. "We know that administering or receiving an injection, especially for a medicine that patients need to receive regularly, can seem daunting for patients or their parents or caregivers," said Bill Sibold, executive vice president and head of Sanofi Genzyme. "The Dupixent pre-filled pen was developed based on patient input and offers the latest technology, including visual and audio cues, to help provide support when taking this medicine."

Sleep assessment machine learning engine trial sees initial results

Sleep solution provider dayzz has announced the results of its first clinical trial involving the company's machine learning engine to assess for common sleep disturbances using a proprietary questionnaire. Conducted in collaboration with the Johns Hopkins Center for Interdisciplinary Sleep Research and Education, the trial validated the Digital Sleep Questionnaire (DSQ) to identify common societal sleep disturbances including insomnia, delayed sleep phase syndrome, insufficient sleep syndrome, and risk for obstructive sleep apnea. "dayzz's machine learning algorithm was trained on gold-standard sleep expert diagnoses of people in the community with common sleep complaints and has shown high accuracy in predicting those at risk for prevalent sleep disorders," said Dr. Mairav Cohen-Zion, chief science officer at dayzz. "This is a critical step forward for dayzz in identifying sleep disorders at scale and offering a personalized sleep training experience for our users." A randomized clinical trial conducted in collaboration with researchers at Brigham and Women's Hospital and Harvard Medical School will now examine the effectiveness of the dayzz solution in a large community-based organizational setting.

Citius Pharmaceuticals gets FDA go-ahead for stem cell treatment

Citius Pharmaceuticals, Inc., has received a written response from the FDA regarding its pre-investigational new drug application for its induced mesenchymal stem cells to treat and reduce the severity of ARDS in patients with COVID-19. The FDA acknowledged that the company could apply for fast-track designation and provided Citius with the chemistry, manufacturing, and control requirements for the proposed trials. The company plans to initiate actions on the FDA's recommendations and follow up with the FDA with an investigational new drug application under the Coronavirus Treatment Acceleration Program.

Insmed reports positive results from WILLOW trial

Insmed, Inc., presented the final results from the Phase 2 WILLOW study of brensocatib (formerly INS1007) in patients with non-cystic fibrosis bronchiectasis during a virtual American Thoracic Society session titled Breaking News: Clinical Trial Results in Pulmonary Medicine. The study met its primary endpoint, with brensocatib significantly prolonging time to first pulmonary exacerbation over the 24-week treatment period vs. placebo. The risk of exacerbation at any time during the trial was reduced by 42% for the 10-mg group vs. placebo and by 38% for the 25-mg group vs. placebo. Treatment with 10 mg brensocatib also resulted in a significant reduction in the rate of pulmonary exacerbations vs. placebo, a key secondary endpoint. Patients treated with brensocatib experienced a 36% reduction in the 10-mg arm and a 25% reduction in the 25-mg arm vs. placebo. Change from baseline to the end of the treatment period in concentration of active neutrophil elastase in sputum demonstrated a significantly larger reduction with both brensocatib doses vs. placebo.

Armata Pharmaceuticals receives DoD funds to further bacteremia drug candidate

Armata Pharmaceuticals, Inc., has received a $15 million award for a three-year program from the U.S. Department of Defense (DoD) to partially fund a Phase 1b/2, randomized, double-blind, placebo-controlled, dose-escalation clinical study of Armata's therapeutic phage-based candidate, AP-SA02, for the treatment of complicated Staphylococcus aureus bacteremia infections. "This funding from the DoD validates the potential of phage-based therapeutics and helps us move AP-SA02 into clinical development," said Armata CEO Todd R. Patrick. "Drug-resistant S. aureus bacteremia infections carry mortality rates as high as 40%, reflecting the urgent need for novel and improved treatment options."

Campaign aimed at underserved populations

The American Thoracic Society and the American College of Chest Physicians have joined forces to launch For My Lung Health, a patient-education website and media campaign aimed at empowering people from underserved communities who live with chronic lung disease. The media campaign, which ran throughout the summer, targeted locations showing the highest impact on underserved populations, with the public service message, produced in both English and Spanish, offering supportive tips and directing viewers to additional online resources. The website provides disease-specific information, in video and written formats, on chronic lung diseases ranging from asthma and COPD to idiopathic pulmonary fibrosis and COVID-19.

Headband Lives Up to Traditional PSG

According to Dreem, a peer-reviewed study published in *Sleep* has shown that the Dreem headband, an ambulatory sleep measuring device with built-in algorithms, may be as accurate in diagnosing sleep disorders as polysomnography (PSG). The joint clinical trial between researchers at Dreem and the French Armed Forces Biomedical Research Institute tested the headband's signal acquisition and sleep-staging algorithms against PSG, scored manually by five experts, in 25 subjects who completed an overnight sleep study using PSG and the headband simultaneously. Results showed that the Dreem headband acquired EEG measures that correlated with those of the PSG and measured biomarkers reliably throughout the night. The algorithm performed sleep staging with accuracy similar to that of the five experts manually scoring the PSG readings.

Telehealth solution shows promise

Two abstracts published in the June supplement to the *Journal of Cystic Fibrosis* have demonstrated clinical benefits for the NuvoAir Respiratory Platform when used with patients with cystic fibrosis. The platform allows patients to perform a lung function and symptom assessment in their own homes. The studies, which were conducted at Royal Brompton Hospital in the UK, showed a 30.9% reduction in the number of booked face-to-face consultations and a 39.8% reduction in urgent face-to-face consultations when the hospital delivered its adult cystic fibrosis service virtually using the platform. The solution was rated 9.4 out of 10 by patients, and 43.9% of patients reported that they felt they were better able to understand their disease as a result of using NuvoAir. Self-reported medication adherence was also improved.

Insurance coverage expands

Olympus recently announced an expansion of insurance coverage for the Spiration Valve System, which has been demonstrated to improve quality of life for patients suffering from severe emphysema. Both Aetna and Humana now provide coverage for eligible patients to receive minimally invasive

bronchoscopic lung-volume reduction treatment using the system. “Before endobronchial valves such as the Spiration Valve were FDA approved, the only option for patients on maximum medical management was major surgery, which comes with significant risks,” said Dr. Gerard Criner, professor of medicine and chair of the department of thoracic surgery and medicine at Temple University. “With significant evidence now in place for endobronchial valve treatment, we can offer patients a choice in treatment options.”