AARC Times
An Official Publication of the American Association for Respiratory Care
December 2020 Vol. 44, Issue 12 www.aarc.org

Kansas Educators Go Back to the Bedside

When their rural community was inundated with patients with COVID-19, Jane Zachary and Arlette Austin knew they had to pitch in and help.

Inside This Issue

FEATURES

CLINICAL ARTICLES

Chronic Disease Manager | COPD: A Disease by Assumption
Assumptions can often be helpful when guiding clinical decisions that provide efficient, effective therapies for the people in our care. However, assumptions can also be dangerous, leading us to overlook some of the very basics of health.

By Mike Hess, MPH, RRT, RPFT

COLUMNS

General Counsel | Improve Knowledge, Improve Patient Care
Anthony L. DeWitt, JD, RRT, CRT, discusses the value and importance of improving your knowledge and skills.

RC Currents
Check out the latest news and industry updates of the profession.

Industry Watch
Read the latest updates important news about the health industry, service industry, pharmaceutical companies, and the events that affect the profession.

AARC STAFF SPOTLIGHT

Always ready to help, the AARC staff works hard to help provide a great membership experience for you. Let's meet a few staff members:

Anne Marie Hummel
Associate Executive Director
anneh@aarc.org
Anne Marie oversees state and federal legislative and regulatory issues impacting respiratory therapists, the RT profession, and the pulmonary patient.

Annissa Buchanan
Meetings & Conventions Department Manager
annissa.buchanan@aarc.org
Annissa manages staff and processes. Oversees Congress and Summer Forum educational programs. Oversees speaker logistics.

Erica Jackson
Customer Service Team Lead
erica.jackson@aarc.org
Erica assists members with renewing their membership, providing membership information, and using aarc.org.

Reagan Hickey
CRCE Coordinator
reagan.hickey@aarc.org
Reagan answers questions related to the accreditation and transcripting of continuing education courses and the AARC's educational library.

Your AARC Times Team

Communications Manager

Heather Willden, BS

Managing Editor
Douglas Laher, MBA, RRT, FAARC

Contributors
Debbie Bunch, BA

Manager of Marketing and Production
Amanda de Coster, BA

Senior Graphic Designer
John Knotts

Graphic Designer
Anna Patiño

Director of Business Development
Sarah Vaughn, BS, RRT

Advertising Rates and Media Information
Contact: sarah.vaughn@aarc.org
9425 MacArthur Blvd., Suite 102
Irving, TX 75063
Voice (972) 243-2272
Fax (888) 206-9006

AARC Times and RESPIRATORY CARE — official publications of the AARC

Daedalus Enterprises, Inc.
9425 N. MacArthur Blvd., Ste. 100
Irving, TX 75063
Voice (972) 243-2272
Fax (972) 484-2720

Publisher
Thomas J. Kallstrom, MBA, RRT, FAARC

Information Contacts

AARC Membership or Other AARC Services: American Association for Respiratory Care • 9425 N. MacArthur Blvd., Ste. 100, Irving, TX 75063 • (972) 243-2272 • Fax (972) 484-2720 • www.aarc.org

Respiratory Therapist Credentialing & Registration: National Board for Respiratory Care • 18000 W. 105th St., Olathe, KS 66061-7543 • (913) 895-4900 • Fax (913) 895-4650 • www.nbrc. org

Accreditation of Education Programs: Commission on Accreditation for Respiratory Care • 1248 Harwood Rd., Bedford, TX 76021-4244 • (817) 283-2835 • Fax (817) 354-8519 • www.coarc.com

Grants, Scholarships, Community Projects: American Respiratory Care Foundation • 9425 N. MacArthur Blvd., Ste. 100, Irving, TX 75063 • (972) 243-2272 • Fax (972) 484-2720 • www.arcfoundation.org

AARC Tımes (USPS 491-930) (ISSN 0893-8520) is a monthly publication of Daedalus Enterprises, Inc., for the American Association for Respiratory Care.

Article and Feature Contribution: AARC Tımes welcomes AARC member contributions of feature articles and information for the regular columns. Send all materials via email to Communications Manager Heather Willden at heather.willden@aarc.org. Letters from members will be considered for publication if they relate to specific articles appearing in AARC Tımes within the last three months. Editorials may be published if they are of interest to the AARC membership. The editor reserves the right to edit letters and articles without changing their meaning in order to suit legal and space requirements.

Kansas Educators Go Back to the Bedside

When their rural community was inundated with patients with COVID-19, Janae Zachary and Arlette Austin knew they had to pitch in and help.

by Debbie Bunch

Seward County, KS, is home to four meatpacking plants, one in the county seat of Liberal and three others in the surrounding area. Together these plants provide meat for hundreds of thousands of people across the country and around the world and a livelihood for hundreds of residents in this rural area of the state, many of them from the Hispanic community. Unfortunately, conditions inside these plants — people doing their jobs in close proximity to each other in poorly ventilated spaces — encourage the spread of COVID-19.

Arlette Austin, BSRC, RRT, grew up in Liberal and is intimately familiar with these plants and the people who work in them. “In our area, COVID-19 hit the hardest within these corporate meatpacking plants and farms,” explains the director of clinical education for the respiratory therapy program at Seward County Community College (SCCC) in Liberal. “The employees were considered essential to continue the distribution of food throughout the world, meanwhile putting their lives at risk every single day.”

Her own mother was one of them. In her early 60s and suffering from hypertension, Austin’s mother was considered at especially high risk for adverse outcomes from COVID-19. Austin and her siblings convinced her to give up her job at the plant until the pandemic eased up. As a respiratory therapist, though, Austin knew her pandemic story would have to take a different direction. “National Beef essentially raised me,” she says. “My parents both worked there at one point in time, and that income from that meatpacking plant is what brought food to the table and provided a roof over my head.”

Regardless of the risks, she had to get back to the bedside so she could help take care of the workers who were stricken with COVID-19. “My mother was upset and asked, why would you pull me from work to keep me from contracting this disease, yet you are willing to go into the front lines and possibly contract this virus?” she says. Austin struggled to explain it to her mother at the time, but she was sure of her decision. “As health care providers, we take an oath to practice our professions faithfully,” she says. “I had to do what I felt was right.”

Arlette Austin, right, and Janae Zachary are educating the next generation of RTs at Seward County Community College in Liberal, KS.

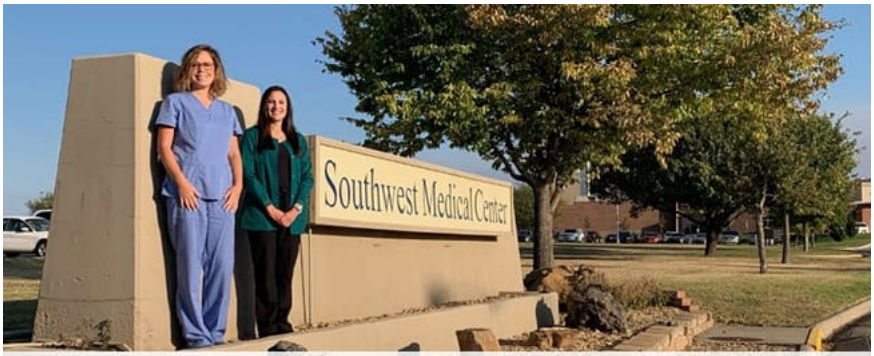
Happy for the help

Her colleague at SCCC, Respiratory Therapy Program Director Janae Zachary, BGS, RRT, was with her all the way. While she didn't grow up in Liberal like Austin did, coming instead from mainly Caucasian and college-educated Beloit, she nonetheless felt a strong urge to support this community of hardworking people who were seeking a better life for their children. She saw their commitment to the American dream during the six years she spent on staff at Southwest Medical Center (SWMC) in Liberal, and it's only been reemphasized during her years at the college. "The first time that I realized the impact that SCCC had on its community was when I went to my first SCCC graduation ceremony in 2017 as a faculty member," she recalls. "When they asked the first-generation students to stand up, and over half of the students stood, I got chills."

Shortly after it was clear the United States was in the early days of a pandemic, Zachary called her former department director at SWMC, Layforrest Moore, MHS, RRT, RRT-NPS, to see if they could use the college's ventilators. "We had multiple facilities inquiring about them because our students complete their clinical rotations at 13 sites in the southwest Kansas region, but we wanted to support our community in which we live and work," she says. "While speaking to my former boss, I also offered to come back PRN and help if they needed me."

That was in March, before COVID-19 was being felt in the community, so Moore said yes to the ventilators but no to the offer to work right away. But it wasn't long before he was more than happy to have both Zachary and Austin pitch in. By early May, the virus had made its way into the meatpacking plants, and the hospital was filling up with patients. The two educators took on PRN positions at SWMC, alternating the days they worked so one of them would always be available for their students. "This did not affect the students immensely as it was close to their final exams for the semester at that point," explains Austin.

Zachary had some mom issues with the decision as well, in her case due to her own respiratory condition. She was diagnosed with asthma at age two and still takes medications for it today. "My mother was very upset and worried that I had volunteered, which weighed heavily on my mind, but in the end, my duty as a licensed and registered respiratory therapist outweighed my fears," she says.



Working PRN at Southwest Medical Center gave the two educators a birds-eye view of life inside a hospital during the pandemic.

Crazy times

Austin and Zachary found great need for their services once they arrived in the department in mid-May. "Even though we were only PRN, I was putting in part-time to full-time hours," says Zachary. "These RTs needed a break, and they needed extra hands on deck." She says she was shocked to see how much work the hospital had put into making sure patients with COVID-19 had their own units and were sequestered from the other patients in the hospital. The amount of personal protective equipment needed to care for these patients was another eye-opener.

The 100-bed hospital was running only two or three RTs per shift, so there was plenty of work to go around. "When I would work, whoever took the COVID unit only took care of those patients to protect our other patients in the hospital," she says. "That meant the other person on shift took the rest of the hospital. It was such a crazy time to be back."

Austin says she often put in 24 hours per week during the heaviest part of the first wave that hit Seward County. She describes the experience as entering a whole new world. "Immediately upon arriving to work my first shift, I felt the energy transpiring from the therapists," she says. "They were exhausted mentally, physically, and emotionally. The hospital was unrecognizable. The temporary walls, doors, plastic, shields, gave a sense of our new reality."

Both educators applaud the permanent staff of RTs at SWMC for their dedication during the pandemic. Says Austin, "The RT department has a total of 10 therapists — all 10 of them worked and continue to work hard day and night to keep pushing through. They are truly inspirational."

Good outcomes

Zachary emphasizes SWMC often had as many patients with COVID-19 in house as larger hospitals in more metropolitan areas of the state, but with fewer RTs to go around. "I really want to highlight the RTs that were there throughout this whole pandemic as they are the true heroes of this story," she says.

She also applauds the RT department's efforts to coordinate with larger hospitals in Kansas, such as Wesley Medical Center in Wichita and Kansas University Medical Center in Kansas City, as well as their own hospitalists and physician assistants, to ensure their patients were being treated with best care practices. "I am so proud and honored to have been a part of this team," she says. "I saw a hospital come together as a team to do whatever it took to take excellent care of these patients and still provide excellent care to the rest of the hospital's patients."

Austin echoes Zachary's comments about needing to find the best way to care for the patients with COVID-19 who were admitted to the facility. Like the rest of the world in those early days, they knew they

were dealing with an unknown virus and no proven ways to treat it. “The team at SWMC never gave up, continued to research, continued to implement new standards and protocols, and continued to improve patient outcomes,” she says.

Data collected by the facility’s chief hospitalist, Andrey Ilyasov, MD, tell the story. As of this writing in early October, he says the hospital has seen about 300 patients with COVID-19, and 29 have required mechanical ventilation. Around 20 others have been on noninvasive ventilation with 100% oxygen for longer than 48 hours. Only eight patients have died. Dr. Ilyasov believes having intubation, ventilation, and extubation protocols that are specifically designed for COVID-19 has made a difference. He credited RTs, among other team members, with much of the success seen at SWMC in this excerpt from a video posted on the hospital’s Facebook site in June.

Calming frightened patients

The first few times she was assigned to work, Austin says both the COVID-19 ICU and COVID-19 medical floor were full. Two therapists handled the two COVID units while a third therapist covered the rest of the hospital. When she was in the COVID areas, she says she and the other RT on shift would start at opposite sides of the units and then meet in the middle. Typically, they had 9–11 patients on mechanical ventilators and another five or so on noninvasive ventilation modalities, plus another 10 who were considered non-critical on the medical floor. “We would start our rounds at about 0700 and finally got somewhat of a break to sit down, eat or drink anything, at 1400,” she says. “Our COVID patients needed our care around the clock.”

Austin recalls one patient who came from one of the meatpacking plants and was deteriorating quickly. “As we were prepping the area to intubate the patient, he felt alone, afraid, and had just gotten off the phone with his family,” she says. “I reached for his hand and held it. As they were sedating/paralyzing him, he looked right at me and said, ‘Please, I don’t want to die.’ I told him, ‘We will do everything in our power to not let that happen.’” She was off for a while after that, so she didn’t see the patient again, but it is her understanding that he survived.

Zachary has some poignant patient memories, too. One involved a man who had been on a ventilator for more than two weeks and in the ICU for almost a month. “He was finally moved to a skilled nursing unit and always wanted his window to the outdoors open,” she recalls. By then it was hot in Kansas and his room would be sweltering. “I finally asked why he was keeping his screen open and he said it was in case his family came to visit, as this was the only way they could see each other and talk face-to-face.”

Another woman tugged at her heartstrings while she was preparing to place her on noninvasive ventilation. She couldn’t speak English and Zachary couldn’t find anyone nearby who could speak Spanish. ”So I just had to try to convey that everything would be okay,” she says. But the women started crying and was so frightened that once she left the bedside, Zachary immediately sought out a coworker who could translate for her so she could explain what was happening to the patient. “I thought to myself, how awful to have a language barrier amid not understanding medically what is going on in the middle of a respiratory pandemic and having to do it alone without family support,” she says.

Small but mighty

Jane Zachary and Arlette Austin are back in the classroom now — both in person and virtually — but they are still ready to work in the hospital as needed. Their students are doing their clinical rotations there, too, although they are not allowed to work in the COVID-19 units. Both educators believe strongly that their small community has done a decent job of meeting the pandemic head on.

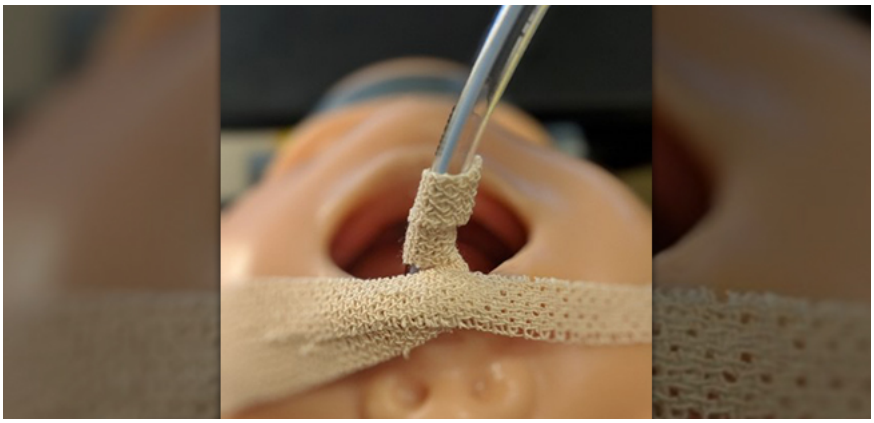
“I think there is a common misconception that when RTs — and health care workers in general — work in smaller communities, it is due to a lack of knowledge or skill,” says Zachary. “SWMC RTs and the whole health care team are a testament that these notions are false. We may be small, but we are mighty.”

Arlette Austin has nothing but praise for the RTs in her community, too. “I sincerely want to recognize all the respiratory therapists and the team at SWMC. They are the ones working every single day on the front lines and truly making a difference in our little corner of the world. I cannot thank them enough for taking me under their wing, while saving many lives.”

Neonatal Endotracheal Tubes

How to Keep Them In, When to Take Them Out

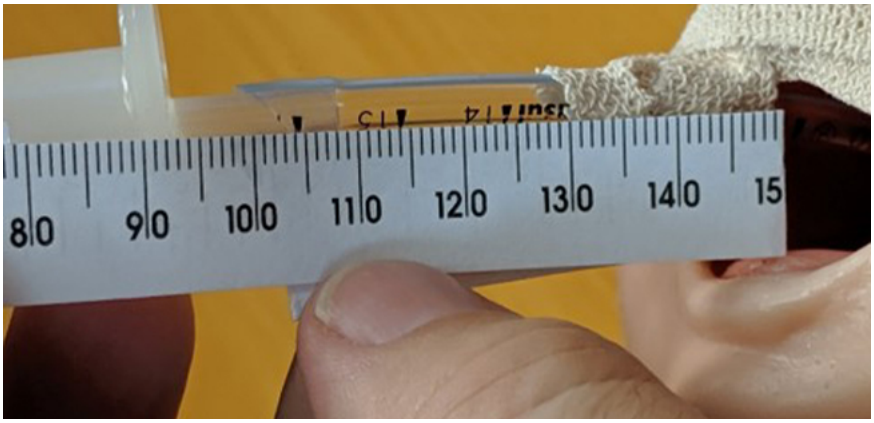
by Stephen Hepditch, BS, RRT-NPS



An unplanned extubation is any unintentional dislodgement of an endotracheal tube (ETT) from the trachea. In the neonatal ICU setting, unplanned extubations can result in serious harm to critically ill infants[1]. Some suffer cardiovascular collapse after unplanned extubation events, but many more do not require re-intubation, indicating missed opportunities for earlier ventilator liberation.[2] In this discussion, I will focus on optimizing management of mechanically ventilated neonates by addressing the balance between prevention of unplanned extubations and appropriate evaluation for extubation readiness.

Our journey begins

In 2018, Duke launched the "Commitment to Zero" initiative, intended to promote a culture of zero avoidable patient harm events. Respiratory therapists have significant impact on several key areas of preventable harm, including device-related pressure injuries and unplanned extubations. Unplanned extubations have a multitude of root causes, and analyzing the specific causes at your institution is key to your success in reducing their rate of occurrence. While a discussion of unplanned extubations isn't inherently about a quality improvement process, if you want to understand why they happen and what you can address to improve your rate of unplanned extubation, a quality-improvement approach will definitely help you along the way.



Data collection and interpretation

To that end, when we set out to investigate ways to improve our unplanned extubation rate, we started with our reporting mechanism. After each incident, the multi-disciplinary team gathers to debrief and document any activities occurring during the event, contributing factors, and results (eg, re-intubation, hemodynamic instability, etc.). This is necessary to establish a baseline rate of events (ie, the number of events per 100 ventilator days) to allow tracking of any progress made by targeted interventions.

From our baseline data we developed Pareto charts (Fig.1), a cause analysis tool in the form of a bar graph that counts the frequency of each contributing factor as a percentage of the total. This allowed our team to decipher which procedures were placing patients at risk and what factors were "most contributing" to unplanned extubation events. Trends quickly developed, and several "high-risk" procedures were identified. Some were obvious (eg, ETT adjustment, patient turns), but others were more subtle (eg, bedside radiologic studies and line placements). Other interventions appeared lower than expected on the list of contributors. These were procedures involving big movements, like parent holding (kangaroo care) and linen/isolette changes. We theorize that these procedures resulted in relatively low unplanned extubation rates as a result of increased vigilance regarding the care involved.

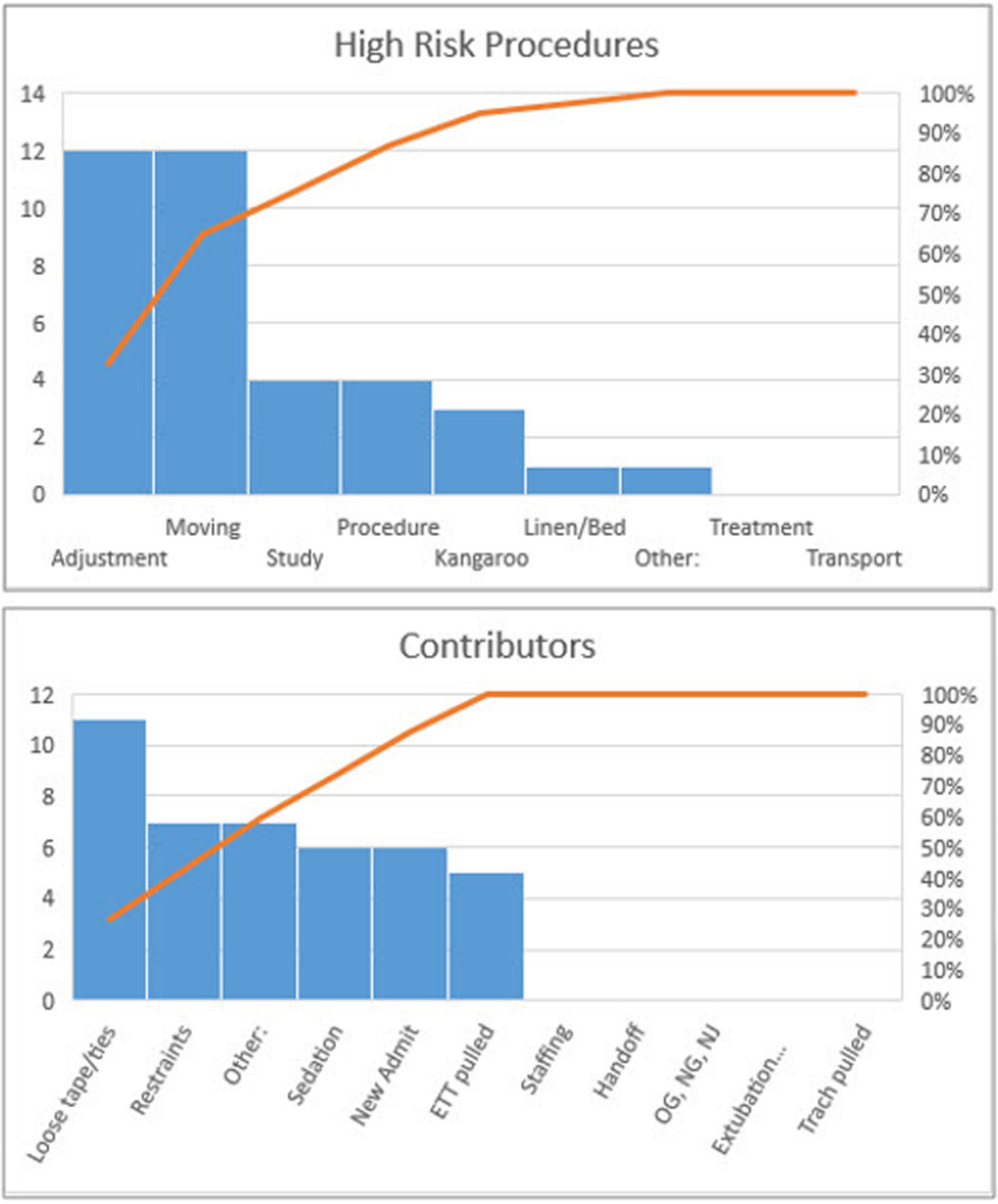


Fig.1: Pareto Charts

After we identified major contributors to unplanned extubation events from our Pareto charts, we created a fishbone diagram, or a "cause and effect" diagram (Fig. 2).[3] A fishbone diagram seeks to identify specific actions or systemic issues that are potential causes for these problems. Once you've identified your root causes and contributors, you can target interventions to address each specific issue.

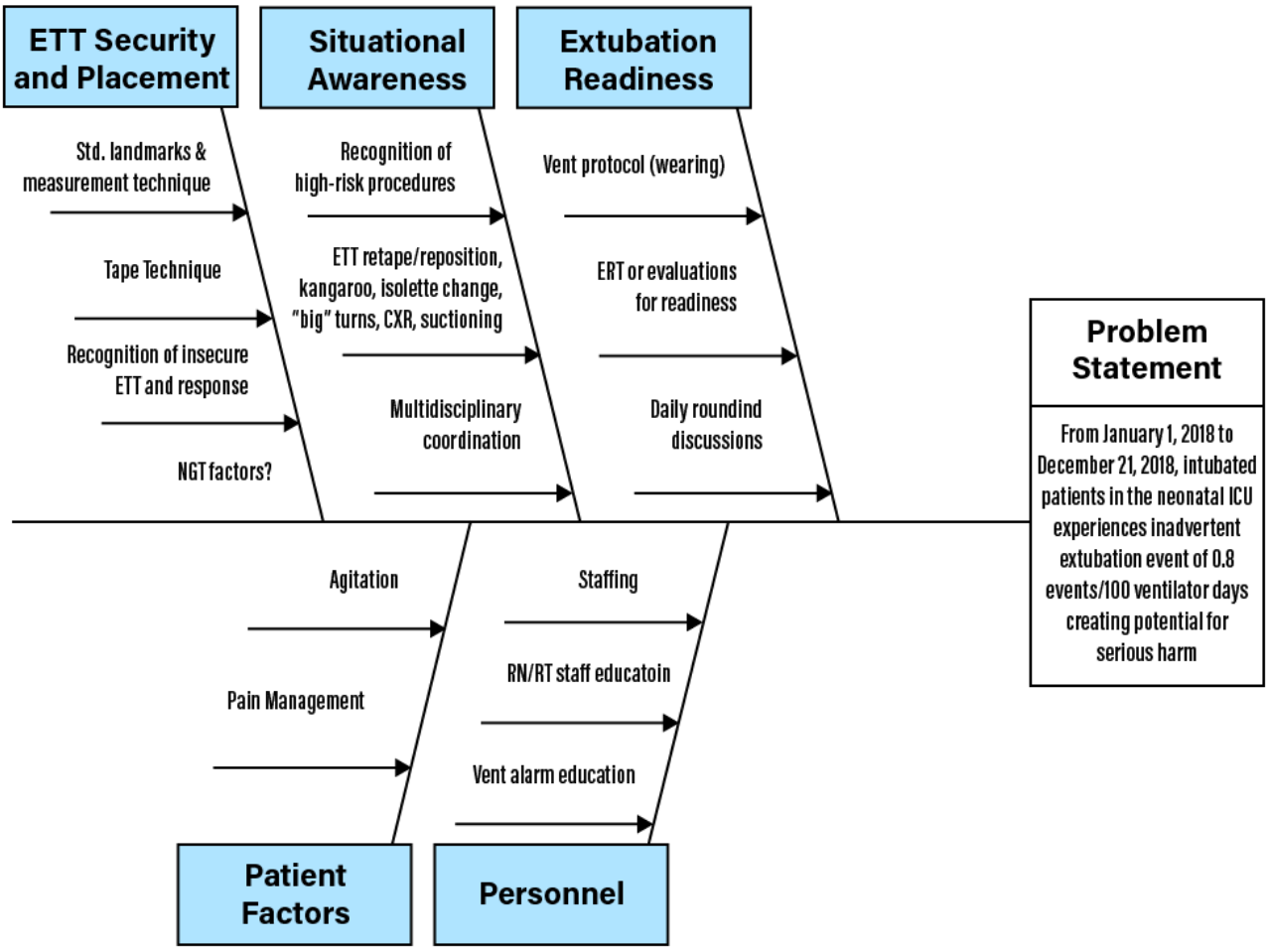


Fig.2: Fishbone Diagram

Using these tools allowed us to identify and focus our resources on the key drivers of our rate of unplanned extubations.[4] We then developed education and interventions to address: (1) ETT security, (2) coordination of care surrounding high-risk procedures, and (3) appropriate assessment of readiness to extubate.

ETT security

We began by standardizing the methodology for ETT security. Our institution uses tape (vs. a commercial device) to secure ETTs, and professional drift had created inconsistencies in how neonatal ETTs were both secured and measured. Using online resources and one-on-one follow-up, we standardized how tape is applied and how insertion depth is measured. We also targeted unnecessary manipulation of ETTs by creating tracking sheets for each patient bedside, listing the date and depth of each tube move, showing a history that wasn't easily viewed in the medical record. This allowed the team to evaluate whether a tube really needed to be manipulated or if a suboptimal chest radiograph was giving flawed information.

High-risk procedures

Portable chest radiographs are a neonatal ICU standard of care, but inconsistency in technique and patient placement can result in erroneous interpretation and unnecessary ETT manipulation, risking unplanned extubation events. Identifying portable chest radiography as a high-risk procedure prompted

us to ensure that two licensed providers were at the bedside for each radiologic procedure, and one of these two providers was tasked with the security of the ETT and proper patient positioning for an optimal study. Other high-risk procedures were more obvious offenders (eg, re-taping ETT, moving patient) and were addressed with similar education and standards of care. ETT security is assessed before any high-risk procedure is performed.

Audits

With all changes in policy and practice, it is important to follow up with staff to ensure they understand expectations and are practicing within guidelines. We use Kamishibai-style cards (K-cards) to evaluate how staff are incorporating protocol changes into their daily practice. K-cards[5] are designed to evaluate elements of your procedural changes (ie, bundles) to see if each item is compliant. Our high-risk procedure card, for example, lists a series of high-risk procedures and asks two questions for each: 1) Did your patient have this procedure today and 2) Were there two providers present for it? Tracking bundle compliance in this manner allows us to quickly see trends in noncompliance. The audits do not provide context or detail, but they are designed to drive a conversation between bedside staff and leadership about any barriers to implementation.

Extubation Readiness

The third key driver we identified was our ability to properly assess neonates for extubation readiness. Approximately 50% of the unplanned extubation events we record do not result in re-intubation within 24hrs, indicating missed opportunities for earlier ventilator liberation and creating unnecessary opportunities for unplanned extubation events. Improving our evaluation of extubation potential can reduce both unplanned extubations and ventilator length of stay.[6] We evaluate neonates for extubation readiness using a Respiratory Severity Score (RSS)[7] in conjunction with an extubation readiness test consisting of a closely monitored CPAP trial lasting 3–5 min.[8] This objective evaluation must be coupled with the expectation of a daily rounding discussion with the multidisciplinary team of an extubation plan for all intubated patients.

Solutions for Patient Safety

Institutional change is difficult and time consuming but sharing information and lessons learned with other hospitals experiencing similar problems has helped us to focus our energy on effective change mechanisms. The Solutions for Patient Safety (SPS) collaborative is an international collection of children's hospitals and our participation in the SPS Unplanned Extubation workgroup has helped us build an "all teach, all learn" culture of safety by applying lessons learned and sharing successes across a larger coalition to improve outcomes for all institutions involved.[9]

References

1. Kambestad KK, Huack A, Nair S, et al. The Adverse Impact of Unplanned Extubation in a Cohort of Critically Ill Neonates. Respir Care. 2019 Dec;64(12):1500-1507. doi: 10.4187/respcare.06721. Epub 2019 May 28. PMID: 31138734.

2. Silva PS, Reis ME, Aguiar VE, Fonseca MC. Unplanned extubation in the neonatal ICU: a systematic review, critical appraisal, and evidence-based recommendations. Respir Care 2013;58(7):1237–1245.

3. Gartlehner G, Schultes M-T, Titscher V, et al. User testing of an adaptation of fishbone diagrams to depict results of systematic reviews. BMC Med Res Methodol 2017;17(1):169.

4. Hatch LD, Scott TA, Rivard M, et al. Building the driver diagram: a mixed-methods approach to identify causes of unplanned extubations in a large neonatal ICU. Jt Comm J Qual Patient Saf 2019;45(1):40–46.

5. Shea G, Smith W, Koffarnus K, et al. Kamishibai cards to sustain evidence-based practices to reduce healthcare-associated infections. Am J Infect Control 2019;47(4):358–365.

6. Chawla S, Natarajan G, Shankaran S, et al. Markers of successful extubation in extremely preterm infants, and morbidity after failed extubation. J Pediatr 2017;189:113–119.e2

7. Gupta D, Greenberg RG, Sharma A, et al. A predictive model for extubation readiness in extremely preterm infants. J Perinatol 2019;39(12):1663–1669.

8. Shalish W, Kanbar L, Kovacs L, et al. Assessment of extubation readiness using spontaneous breathing trials in extremely preterm neonates. JAMA Pediatr 2020;174(2):178–185.

9. Lyren A, Brilli RJ, Zieker K, et al. Children's hospitals' solutions for patient safety collaborative impact on hospital-acquired harm. Pediatrics 2017 Sep;140(3):e20163494.

Additional Reading

Crezeé KL, DiGeronimo RJ, Rigby MJ, et al. Reducing unplanned extubations in the NICU following implementation of a standardized approach. Respir Care 2017;62(8):1030–1035.

Shalish W, Latremouille S, Papenburg J, Sant'Anna GM. Predictors of extubation readiness in preterm infants: a systematic review and meta-analysis. Arch Dis Child Fetal Neonatal Ed 2019;104(1):F89–F97.

about the author…

Stephen Hepditch, BS, RRT-NPS has been a clinician in adult & pediatric care, a travel RT, an ECMO specialist and a supervisor before moving to his current position as a clinical educator at Duke Hospital in Durham, NC. In his spare time, he is also currently working full time as a third grade homeschool teacher.

Building Channels of Communication During Rounds

by Madison Fratzke, BSRT, RRT, RRT-ACCS

Multidisciplinary rounds is a synergistic tool essential to the professionalism of multidisciplinary care, especially in critical care units. This technique aims to facilitate communication and care coordination.[1-2] Associated with lower mortality,[3] improved staff satisfaction,[4] and decreased length of stay for patients,[5-6] multidisciplinary teams are made up of but not limited to the attending physician, bedside nurse, respiratory therapist, pharmacist, dietitian, case manager, coordinators, and residents.[1-2] Effective rounding requires interpersonal communication among these specialties, and channels of communication sometimes need to be created or strengthened. A good place for the respiratory therapist to start may be with understanding the value of the RT role in rounds, identifying potential roadblocks in workplace communication, and having the tools to overcome potential barriers.

Expectations for the respiratory therapist role in rounds may vary by institution, but the RT is always expected to be well prepared for rounds. The team relies on the RT to briefly relay relevant findings from the most recent assessment, results of any spontaneous awakening and breathing trials, pulmonary mechanics, and suggestions on treatment interventions and diagnostic testing. In rounds, the RT ensures accurate information is delivered, provides valuable input on the care plan,[1-2] and coordinates a plan for ventilator liberation.[1] It is also important to be prepared for questions from the team and to recognize the opportunity to provide small doses of education. In an environment where the RT may be minimally recognized or undervalued, it is important to consistently attend rounds and to speak up. The ability to be effective in rounds improves with experience and with building rapport, but having a good foundation for interpersonal communication is pivotal.

Even though multidisciplinary rounds has been shown to improve communication,[1] there are common barriers respiratory therapists may face. Potential workplace barriers to communication are framing differences, defensiveness, physical distance, group size and status differences, internal conflict, groupthink, prejudgements, and language issues. Framing differences is the result of how experience and knowledge affect interpretation of a problem. Health care providers receive training from different institutions, so the window through which a problem is viewed may be different. Both parties should recognize this and discuss any conflicts to seek an agreement.

Defensiveness, an age-old survival instinct, can present itself when ones feels his or her work or opinions are under attack. When this happens, it is possible that some or all parties respond poorly, which

impedes discussion of the important topic at hand. Instead, by focusing on the present issue, both parties can avoid attacking one another's motives, thereby mitigating defensiveness.

Technology of the 21st century can open communication channels, but physical distance can decrease the frequency of communication. All members of the patient care team should be encouraged to be physically present during rounds and when the team discusses a patient's change in clinical status.

Larger group size and status differences can affect participation of some team members. Large community hospitals and teaching hospitals may require larger groups during rounds, but the team leader can preserve an environment that encourages input and brief discussions. For team members hesitant to speak up, inviting another colleague to rounds may help improve confidence.

Internal conflict is described as personal conflict between people or groups and has the potential to have a positive effect. This can be channeled through diplomatic means by organizing a meeting outside of rounds. The result could be, for example, development of a new process or protocol.

Groupthink is the result of biased opinions and discourages outside ideas. To overcome a larger group's tendency toward groupthink, the respiratory therapist could choose to discuss these ideas within a smaller group outside of rounds.

In an attempt to stay productive and organized, it is common to make prejudgements. Being pressed for time during rounds puts decision-making at high risk for being influenced by previous knowledge. Respiratory therapists must take the opportunity to advocate for the patient and ensure the team is up to date on the patient's respiratory status.

There are three aspects of language barriers to identify: vagueness and verbosity, jargon, and language differences. Also problematic for communication today are face masks. Regardless of the type of language barrier, it should be acceptable and even encouraged to ask any speaker in rounds to speak more slowly or loudly.[7]

Before tackling these potential barriers, the respiratory therapist should have a complete understanding of each team member's role during rounds.[7] As part of the multidisciplinary team, respiratory therapists should be active participants in multidisciplinary rounds. By understanding the basics of effective communication and consistently presenting pertinent information respiratory therapists can build or strengthen channels of communication.

References

1. Stollings JL, Devlin JW, Lin JC, et al. Best practices for conducting interprofessional team rounds to facilitate performance of the ICU liberation (ABCDEF) bundle. Crit Care Med 2020;48(4):562–570.
2. Rehder K, Turner D, Williford W, Cheifetz I. 788: Respiratory therapy participation in rounds improves accuracy of data presentation [abstract]. Crit Care Med 2012;40(12):1–328.
3. Kim MM, Barnato AE, Angus DC, et al. The effect of multidisciplinary care teams on intensive care unit mortality. Arch Intern Med 2010;170(4):369–376.
4. Mercedes A, Fairman P, Lisa Hogan L, et al. Effectiveness of structured multidisciplinary rounding in acute care units on length of stay and satisfaction of patients and staff: a quantitative systematic review. JBI Database System Rev Implement Rep 2016;14(7):131–168.
5. Dutton RP, Cooper C, Jones A, et al. Daily multidisciplinary rounds shorten length of stay for trauma patients. J Trauma 2003;55(5):913–919.

6. O'Mahony S, Mazur E, Charney P, et al. Use of multidisciplinary rounds to simultaneously improve quality outcomes, enhance resident education, and shorten length of stay. J Gen Intern Med 2007;22(8):1073–1079.
7. McIntosh P, Luecke R, Davis JH. Interpersonal communication skills in the workplace. New York: American Management Association, 2008.

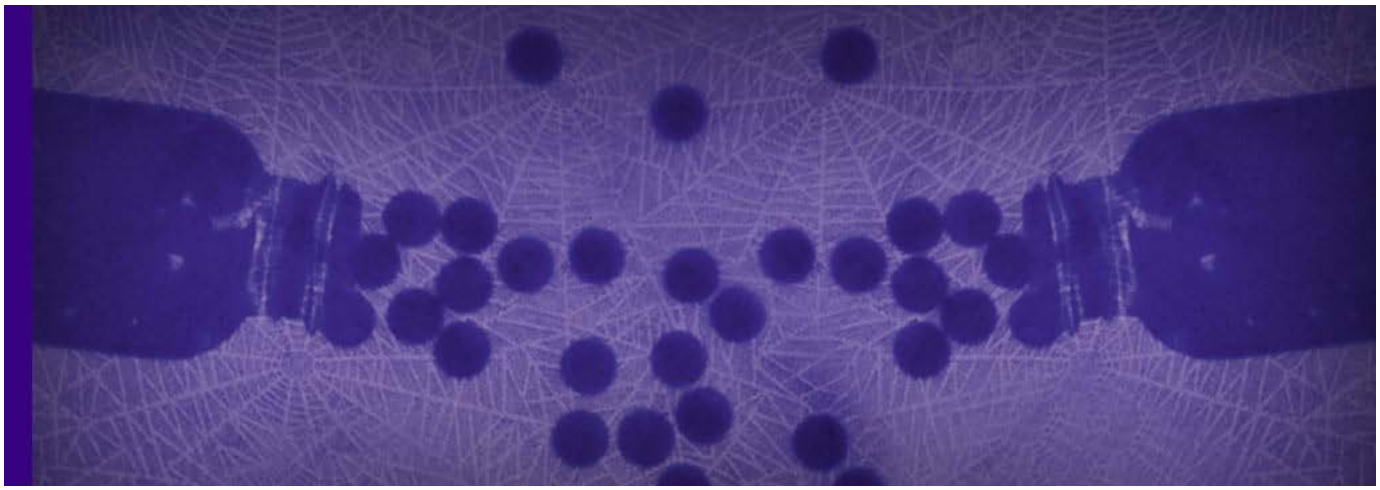
about the author...

Madison Fratzke, BSRT, RRT, RRT-ACCS works at the University of Virginia Medical Center and is the Chair-elect , Respiratory Care Section, Society of Critical Care Medicine..

COPD: A Disease by Assumption Learning Objectives

"They should have known to stop smoking."
"They're a frequent flyer. They don't care about their health."
"There's nothing we can do anyway."

by Mike Hess, BS, RRT, RPFT



We all make assumptions about our patients. It's a part of our human nature, and it can be very difficult to override. It is, however, critical that we do so in order to meet people where they are and to help them live their best lives.

This seems particularly true in our COPD population. Despite being one of the top five causes of death in the United States, COPD research funding through the National Institutes of Health (NIH) currently ranks well below conditions such as malaria, tuberculosis, and back pain.[1,2] One of the main asks of the COPD Foundation's recent Impact 2020 virtual lobbying campaign was for Congress to ask the Centers for Disease Control and Prevention (CDC) to create a dedicated program to combat COPD, because despite the call of the COPD National Action Plan, none currently exists.[3] Why? Because of assumptions.

From almost the beginning, when COPD, asthma, and various other conditions were still lumped together as "chronic nonspecific lung disease," the condition was assumed to be invariably progressive.4 That, in turn, led to the development of the severity staging that the vast majority of us are most familiar with, namely the mild-moderate-severe-very severe scale based on where someone's FEV1% lands. This guided COPD management for decades, allowing us to monitor people as their FEV1 inexorably declined until they entered the dreaded "end stage," where we could prepare them for their imminent demise. We clinicians assumed that virtually every "COPDer" would follow this trajectory, and that there was simply nothing to be done.

That began to change with the publication of the 2011 Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease (the "GOLD report").[5] This iteration was the first to posit that things like symptom burden and exacerbation frequency had as much effect (if not more) than the degree of air flow obstruction. Subsequent versions of the GOLD report have gone even further; while still rightly requiring a spirometric confirmation of chronic obstruction, someone's FEV1% now plays a rather minor role in evaluation. Just like with the assumption that COPD is only caused by smoking (up to 1 in 4 of all cases are never-smokers[6]), science ends up proving our assumption incorrect.

Diagnosis is hardly the only place we make assumptions, though. Virtually every interaction we have with people in our care can be colored by assumptions. Not all of these are malicious; quite the contrary, many of them are born of our desire to help. When I was relatively new in my patient education role, I worked with a patient with COPD who did not have great symptom control. I recommended adding a particular inhaler, did my usual teaching routine, and asked if she was good to go. She enthusiastically nodded and went on her way. One month later, after her primary care physician took my recommendation and put her on the inhaler, she came back for follow-up. I asked her if she had taken this inhaler every day as prescribed, and she once again nodded enthusiastically. Having a new evaluation tool at my disposal, I asked her to demonstrate her technique for me. She took the demo inhaler, flipped it one way, flipped it the other, and finally told me she just couldn't quite remember for some reason. I realized then that I had made an assumption about this patient's responses, one that could have resulted in a lower quality of life for my patient if I hadn't remembered to use the teach-back evaluation tool. I've remembered that experience with every patient who comes to me for education on respiratory therapy.

I also think about that experience when working on patient goals. I was baffled for quite some time after that encounter, trying to figure out why she would say what I wanted to hear instead of being straightforward about the situation. Was she afraid? Embarrassed? If so, about what? Did she have an undisclosed memory issue? Had she been scolded in the past about forgetting her meds? Where did the relationship break down? Then I realized that I shouldn't assume I could figure it out on my own. I would have to build an environment of trust and ask patients more directly.

As I saw more and more patients very similar to that case, I realized that assumptions have not only led to suboptimal clinical decisions, but also to apathy. When we don't (or can't) take the time to meet people where they live, to learn about the barriers they face in fully participating in their own care, we effectively assume we know all there is to know about that person and their case. When that happens, it's very easy to further assume there's simply nothing more we can do. And that's when we give up.

Assumptions may also turn into self-fulfilling prophecies by leading us to ask the wrong questions. Take the essentially flat mortality rate for COPD in the United States between 2000 and 2014.[7] The general assumption is that a variety of external factors have gone into our collective inability to make any headway here, from insufficient care coordination to lack of research. However, my experience in the ambulatory care setting leads me to believe there's a large piece of very basic, very low-hanging fruit that we're overlooking: We assume people know how to use their inhalers the right way and at the right times.

To be sure, I know we as RTs don't generally assume that, because we see the realities of poor inhaler technique every day. But the health care system at large definitely makes that assumption; in many cases, providers assume competence because they have to. There is simply not enough time in primary care for most clinicians to become expert enough to teach and assess inhaler technique, there aren't enough RTs in the setting to shoulder the burden, and formulary barriers often prevent matching patients with the appropriate device. For example, in 2019, a team from North Carolina found that 40% of those people with COPD using dry powder inhalers appeared to lack sufficient inspiratory flow capability to actually use the DPI properly.[8] Another recent study tells us that 79% of people with COPD report at least one potential barrier to inhaler use (arthritis, dexterity issues, cognitive decline, etc.) and over half report multiple barriers, but only 37% of prescribers consider inhaler device selection to be highly important.[9] For these patients, it doesn't matter how long someone takes to teach them; they are simply physically incapable of using the device. Assuming that lack of education is the problem leads to what I call "inadvertent nonadherence," where the patient believes they're doing what they're supposed to do, but actually are not due to hidden barriers. These kinds of longstanding issues have inevitably led to groups like the Aerosol Drug Management Improvement Team (ADMIT) concluding, "Incorrect inhaler technique

is unacceptably frequent and has not improved over the past 40 years, pointing to an urgent need for new approaches to education and drug delivery."[10]

Fortunately, such approaches are coming into practice. The last few versions of the GOLD recommendations explicitly call for ongoing monitoring and assessment of not only clinical and patient-reported outcomes, but inhaler technique and self-management skills, both of which are essential to maximize adherence and improve outcomes.[11] These strategies can be implemented in virtually every setting, from inpatient care coordination to pulmonary rehabilitation to ambulatory clinics and offices, where a growing number of RTs are working to improve patient education and outcomes. In 2017, I was part of a group that presented a poster at COPD10usa that demonstrated sustained clinical improvement (as determined by COPD Assessment Test score) for 72% of patients studied, simply by taking a few extra minutes to teach them to use the tools we ask them to use.

One of the most common axioms in health care is, "When you hear hoofbeats, think horses rather than zebras." Assumptions can often be helpful when guiding clinical decisions that provide efficient, effective therapies for the people in our care. However, assumptions can also be dangerous, leading us to overlook some of the very basics of health. Not everyone who smoked and now coughs has COPD. Not everyone who has COPD progresses in the same fashion or responds in the same way physiologically to medications. And not everyone who goes to the ED or gets an inpatient admission every month is indifferent to their health. Clinicians must be wary of assumptions like these leading to our own pessimism and apathy, lest we allow those to drive our decision-making process. The greatest difference we make in breathing doesn't necessarily come from providing therapies, but by investing in our patients and their stories.

References

1 Centers for Disease Control and Prevention. FASTSTATS: leading causes of death. Available at: https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm. Accessed October 7, 2020.

2 National Institutes of Health. NIH categorical spending: NIH Research Portfolio Online Reporting Tools (RePORT). Available at: https://report.nih.gov/categorical_spending.aspx. Accessed October 7, 2020.

3 National Institutes of Health. COPD National Action Plan. 2017. Available at: https://www.nhlbi.nih.gov/sites/www.nhlbi.nih.gov/files/020147-231_copd_nationalactionplan_v46 508.pdf. Accessed October 7, 2020.

4. Sluiter HJ, Koeter GH, De Monchy JGR, Postma DS, De Vries K, Orie NGM. The Dutch hypothesis (chronic non-specific lung disease) revisited. Eur Respir J 1991;4(4):479–489.

5. Vestbo J, Hurd SS, Agustí AG, et al. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease GOLD executive summary. Am J Respir Crit Care Med. 2013;187(4):347–365.

6. Tan WC, Sin DD, Bourbeau J, et al. Characteristics of COPD in never-smokers and ever-smokers in the general population: Results from the CanCOLD study. Thorax. 2015;70(9):822-829. doi:10.1136/thoraxjnl-2015-206938

7. Ni H, Xu J. Products - Data Briefs - Number 256 - September 2016. Available at: https://www.cdc.gov/nchs/products/databriefs/db256.htm. Accessed October 7, 2020.

8. Ghosh S, Pleasants RA, Ohar JA, Donohue JF, Drummond MB. Prevalence and factors associated with suboptimal peak inspiratory flow rates in COPD. Int J COPD. 2019;14:585-595. doi:10.2147/COPD.S195438

9. Hanania NA, Braman S, Adams SG, et al. The role of inhalation delivery devices in COPD: Perspectives of patients and health care providers. Chronic Obstr Pulm Dis. 2018;5(2):111-123. doi:10.15326/jcopdf.5.2.2017.0168

10. Sanchis J, Gich I, Pedersen S, Aerosol Drug Management Improvement Team (ADMIT). Systematic review of errors in inhaler use. Chest. 2016;150(2):394–406.

11. The Global Initiative for Chronic Obstructive Lung Disease. Global strategy for the diagnosis, management and prevention of COPD 2019. Available at: https://goldcopd.org. Accessed October 7, 2020.

about the authors...

Mike Hess , BS, RRT, RPFT, is the Chronic Lung Disease Coordinator at WMed Health in Kalamazoo, MI and a member of the Board of Directors of the US COPD Coalition.

The Final Chapter Meets a New Beginning

AARC Times gives way to The AARC Newsroom in January

by Debbie Bunch

For more than 43 years now, AARC members have been keeping up with what's going on in their profession through a magazine called *AARC Times*. For the first couple of decades, that magazine was exclusively delivered to their mailboxes every month through the U.S. mail. Beginning in mid-1990s, they also had the option of accessing the publication online, first through limited PDF files, and then, in 2010, through a full blown digital magazine format. Last year, publication of the hard copy edition of *AARC Times* ended, and members have been reading the news and feature articles contained in every issue just like you are reading this article today — in the digital edition.

Beginning in January, the content you have grown to know and love in *AARC Times* is making another move, and this time it is pretty major. The digital edition of *AARC Times* will cease publication altogether, and all of the content will migrate to a brand new news and information portal available through the AARC website. It's being called The AARC Newsroom to reflect not only the inclusion of former *AARC Times* content but all the other news and information content you now see on the front page of AARC.org — plus a host of new content that will harness the power of the digital environment to deliver not just articles to read but videos to watch and podcasts to listen to as well.

AARC Chief Business Officer Timothy Myers, MBA, RRT, RRT-NPS, FAARC, and Associate Executive Director Doug Laher, MBA, RRT, CAE, CMP, FAARC, are spearheading the initiative along with input from the membership. They answer your questions in this interview.

It was just last December that the hard copy edition of *AARC Times* gave way to the all-digital version that members have enjoyed during 2020. What went into the decision to end the digital version of *AARC Times* and move content to the new AARC Newsroom area of AARC.org, and who will be able to access the content?

Tim Myers: 2020 was a hybrid year as we transitioned from what has basically still been a print-based magazine offered in a digital format to a website-based communication medium for the respiratory therapist. The Newsroom will become open-access to all individuals who have an interest in respiratory care. The Newsroom will also explore new areas of communication to our community.

Doug Laher: The digital world is constantly evolving, and the AARC is continually learning about the attention spans and reading preferences of our members in a digital environment. What we've realized is that our members prefer dynamic content in easier to digest "chunks." The Newsroom will continue to deliver the world-class content we've always published, but now it will be delivered to members in smaller bites, multiple times per month. We're no longer bound to a "once per month" delivery vehicle.

How would you characterize The AARC Newsroom for our readers in terms of not only content but look and feel?

Tim Myers: The Newsroom will bring a blend of traditional and non-traditional stories utilizing a variety of media to meet the variation in news consumption preferences seen in our community. The Newsroom will include clinical and news items in print, video, and podcast formats. This new format will also lend itself nicely to delivering this information across a variety of devices utilized by our community.

Doug Laher: The Newsroom brings the best of all media delivery vehicles to a more streamlined, single platform. Even when it went all-digital last year, *AARC Times* was still basically a print medium with a focus on printed text. The Newsroom allows for a full multi-media strategy, which will include traditional clinical content and human interest stories, but also videos, podcasts, professional news, and the like. Think about your favorite online newspaper, and that's the feel that The Newsroom will provide to readers.

We understand that you have been collecting data on which *AARC Times* stories and columns are highly read by members and which are not. How will this data inform your decisions on the types of *AARC Times* content that will migrate to The Newsroom?

Doug Laher: Most existing content will be carried from AARC Times to The Newsroom. But you are right. The digital-only format used for the last year taught us a lot about the reading preferences of our members. We know which are our most highly read articles, what the ideal word count is to keep readers

engaged, how members access the content, etc. We can now incorporate data-driven decision-making in everything we publish. We'll deliver the best of everything our members want and nothing they don't.

How often will The Newsroom content be updated, and how do you believe adding new content more frequently throughout the month will benefit our readers?

Tim Myers: The Newsroom will offer AARC the ability to provide real-time content and information to readers as it happens, instead of several weeks to months later as occurs with "traditional print" delivery. You'll see a blend of content updated on a daily, weekly, or monthly basis as needed. Our AARC News e-mail will be a weekly reminder to our audience to check for new content this week when it is delivered to their inbox.

Can you tell us more about the new types of content planned for The Newsroom that we have not previously seen in either AARC Times or on AARC.org?

Tim Myers: AARC will look to enhance its video content as well as add a new area of podcasts that feature current clinical and industry-related news in interview and conversational formats. The addition of video and podcasts to our standard print news will allow the respiratory community to actively engage on-the-go with AARC through a variety of media channels. These items will also blend nicely with our plans to add an app in the future for one-stop information.

Some members visit AARC.org regularly, but some are only driven there by e-mails and other notifications. You mentioned updates in the weekly AARC News email pertaining to The Newsroom. What else will you be doing to ensure all of our members are aware of new stories and other content that's available?

Tim Myers: Quality, relevant, and timely content is a critical piece to driving engagement to any media vehicle in 2021. The goal is to ensure that The AARC Newsroom provides the types of clinical and news items that our community desires. Engagement with content will be driven through a variety of our media resources, like emailed newsletters as well as social media. And, as noted, we are in the early stages of exploring an AARC mobile app that will house and deliver this content to our members in a mobile-friendly world.

Doug Laher: I think Tim's answer to this question is spot on. I'll just add this. We're so confident in our delivery of frequent, relevant, and dynamic content that we believe AARC members will want to make The AARC Newsroom the home page on their computer desktop.

Stay tuned to your AARC e-mails and social media accounts for announcements regarding the debut of The AARC Newsroom early next year. All your favorite content from *AARC Times* will be there, along with lots of exciting new content delivered in formats tailor-made for the 21st-century lifestyle

Improved Knowledge, Improved Patient Care

by Anthony L. DeWitt, JD, RRT, FAARC

I became a respiratory therapist when we still provided intermittent positive-pressure breathing with saline routinely. We used ultrasonic nebulizers on post-operative patients routinely, whether they needed it or not. It was a time of cost-plus reimbursement — the more you did, the more you got paid. In some hospitals, therapists would set up 10–12 treatments at a time and then go back and complete the treatments for each patient in the order they set them up, all while leaving a patient alone with a bronchoactive drug. It sounds scary to me now.

In 1980, 40 years ago, that was the state of medical knowledge. But here's an interesting thing. It is estimated that the amount of time required in 1950 for medical knowledge to double was 50 years; in 1980, the doubling time was seven years; and in 2010, 3.5 years. In 2020 it is projected to be 0.2 years — just 73 days. Students who began medical school in the autumn of 2010 will experience approximately three doublings in knowledge by the time they complete the minimum length of training (7 years) needed to practice medicine. Students who graduate in 2020 will have experienced four doublings in knowledge. What was learned in the first three years of medical school will be just 6% of what is known at the end of the decade from 2010 to 2020.[1]

In other words, the expansion of medical knowledge is such that medical school students are having a hard time keeping up. Which raises the question of how often you read RESPIRATORY CARE. Since I no longer work actively in the field, I rarely spend time with the journal the way I did in my days as a therapist. But you should.

There are thousands of therapists working today whose scientific knowledge is set in concrete as of the day they received their license for respiratory care. They have not opened a book, and they have not completed a study. They have gone to work every day armed with what they know, which is fixed in time five, 10, or 15 years ago. That should scare you.

All too often, hospital in-service education focuses on the "how" of respiratory care and not the "why" (and, sometimes more importantly, the "why not"). In 1980, every single patient who came in with a potential myocardial infarction received oxygen regardless of whether they were hypoxemic. Current thought is antagonistic to that idea, finding no difference in outcome with or without oxygen therapy in patients without hypoxemia.[2]

Why is this important to you? The work you do every day is based on what you know. So is your documentation. The more you know, the better your documentation.

Early in my legal career, I had the opportunity to depose a respiratory therapist who worked at a hospital in Kansas City. The client had hypoxic brain injury from swelling following an anterior approach disc procedure. The nurses and the therapists had relied on the pulse oximeter, and our theory was that a blood gas should have been drawn because the patient had low blood pressure and, as a result, the oximeter could not be relied upon.

I went into that deposition armed with my oxyhemoglobin dissociation curve, the medical records, and everything I needed to make my client's case. Here's what happened:

Q. You relied on the pulse oximeter.

A. I did.

Q. And what if the oximeter was incorrect?

A. It wasn't.

Q. How do you know?

A. I know how they work.

Q. Oh really? Why don't you just tell me how they work then.

A. Well, a pulse oximeter uses two wavelengths of light. One is at 660 nm, and the other at 940 nm. De-oxyhemoglobin absorbs more light at 660 nm and oxyhemoglobin absorbs more light at 940 nm. Beer's Law says you can determine the concentration of a solute in solution by the absorption of light. Are you getting this?

I had no further questions. The therapist not only knew at least as much as I did about pulse oximeters — I had no idea it was called Beer's Law — but he was up on the science, and I wasn't going to be able to trip him up on a technical point. I have deposed doctors, nurses, chiropractors, and dozens of other professionals, but none of them slapped me around as badly as that therapist did. And he did it by knowing his stuff!

Every opportunity to tune in to what is new and better in medicine is an opportunity, not only to serve your patients better, but also to help your colleagues who may not pay attention to new learning. More importantly, it is an opportunity to prevent becoming a defendant in a medical negligence lawsuit. One of the first questions asked in interrogatories in a medical negligence case is whether the person being sued has taken appropriate continuing education courses. Many times, we see physicians taking routine "Review of the Medicine" type continuing education, but, when deposed, the physician cannot remember anything that was taught. Keeping a notebook of CRCE material and handouts is an excellent way to maintain a knowledge base and a place where you can pull good information.

No one is going to do CRCE for you. You have to do it yourself. But when you do this to improve your knowledge, you also improve the patient care of everyone you work with.

REFERENCES

1. Densen P. Challenges and opportunities facing medical education. Trans Am Clin Climatol Assoc 2011;122:48–58.
2. Hoffmann R. Oxygen therapy in suspected myocardial infarction. N Engl J Med 2017;377:1240–1249.

about the author…

Anthony L. DeWitt, JD, RRT, FAARC, is an attorney and a partner in the firm Bartimus, Frickleton, Robertson, PC, and resides in Opelika, AL. He has also published two books and numerous legal journal articles. This article is not a substitute for legal advice.

Article and Feature Contribution: AARC Times welcomes AARC member contributions of feature articles and information for the regular columns. Send an outline and objectives of your article idea to Communications Manager Heather Willden at heather.willden@aarc.org.

RC Currents

IN THE NEWS

Prediction Tool for COVID-19 Severity

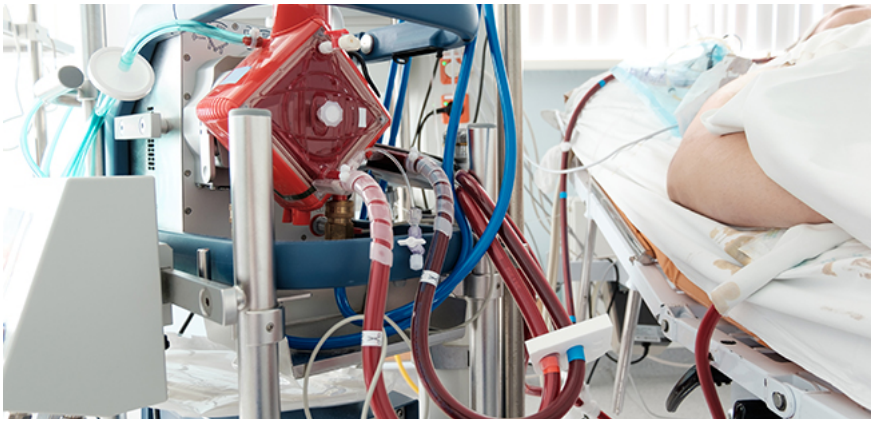
Johns Hopkins researchers have released a COVID-19 prediction model called the **COVID Inpatient Risk Calculator** that they believe can help hospitals determine which patients who are hospitalized with the virus are most likely to progress to severe disease. The model is based on the care of 827 patients age 18 and older at five Johns Hopkins facilities from Mar. 4 to April 24. Among the group, 336 were black, 264 were white, 135 were Hispanic, 48 were Asian, two were Native American, and 42 were multiracial. Among the factors taken into consideration by the model are a patient's age, body mass index (BMI), lung health, chronic diseases, vital signs, and the severity of COVID-19 symptoms at the time of admission.

Forty-five of the patients in the study had severe COVID-19 when they were admitted to the hospital. Another 120 patients developed severe disease or died within 12 hours of being admitted. Of the 302 patients in the study who developed severe disease or died, the median time of disease progression was 1.1 days. By June 24, 694 of the patients in the study had been discharged from the hospital, 131 had died, and seven were still hospitalized with severe COVID-19.

The authors offered two examples of how the model might predict outcomes for an individual patient —

• Using the calculator, they estimated that a 60-year-old white woman with a BMI of 28 kg/m2, no chronic disease, and no fever who is hospitalized for COVID-19 would have a 10% chance of her disease worsening by day two of her hospital stay. The risk rises to 15% after four days and 16% after a week.
• When they used the tool to assess risk for an 81-year-old black woman with a BMI of 35 kg/m2, diabetes, hypertension, and a fever, they found her probability of progressing to severe disease or even death by just the second day of her hospital stay would be 89%. That percentage would increase to more than 95% by days four and seven.

"We identified a few readily measurable demographic and clinical factors that, when assessed on admission to the hospital, can predict if someone has a 5% or a 90% risk of developing severe disease or dying from COVID-19," said study author Amita Gupta, MD. "This is incredibly useful information to have when communicating with patients and their families, as well as for informing resource allocation in the hospital." The study appeared in the *Annals of Internal Medicine*.



ECMO Works for Many Severely Ill People with COVID-19

A rapidly created international registry on the use of ECMO for patients with COVID-19 suggests ECMO can be an effective last-resort treatment for some people with severe COVID-19. According to a new study in *The Lancet*, the data show that fewer than 40% of patients who received the treatment died.

The registry is hosted by the Extracorporeal Life Support Organization and includes data submitted by 213 hospitals on four continents. These patients, who ranged in age from 16 on up, were included in the new analysis. They were started on ECMO between Jan. 16 and May 1. The investigators followed them until death, discharge from the hospital, or August 5, whichever occurred first.

While most of the patients did well on ECMO, results showed patients with certain characteristics and conditions were less likely to benefit from the treatment than others. Specifically, mortality risk rose with patient age and was also higher for those who were immunocompromised, had acute kidney injuries, had worse ventilator outcomes, or had COVID-19-related cardiac arrests. Patients who needed ECMO to replace cardiac or lung function also fared worse.

"The lack of reliable information early in the pandemic hampered our ability to understand the role of ECMO for COVID-19," says co-senior author Daniel Brodie, MD, from New York Presbyterian Hospital. "The results of this large-scale international registry study, while hardly definitive evidence, provide a real-world understanding of the potential for ECMO to save lives in a highly selected population of COVID-19 patients."

Docs Fall Short on Nicotine Risks

A survey of 1,020 physicians suggests many doctors have false notions about the risks associated with nicotine. The poll was conducted among physicians from the specialties of family medicine, internal medicine, obstetrics and gynecology, cardiology, pulmonary and critical care, and hematology and oncology. Although nicotine's primary risk lies in the addiction it causes to tobacco products, 83% of the respondents strongly believed that nicotine directly contributed to heart disease, and 81% thought it contributed to COPD. Pulmonologists were less likely than other specialists to misperceive nicotine as a direct contributor to COPD. Family doctors were more likely than oncologists to misunderstand nicotine as a cancer-causing substance.

Less than a third of the doctors surveyed correctly agreed that nicotine directly contributed to birth defects, and 30% did not even answer the question, suggesting they did not know the answer. Younger doctors and female doctors were more likely than males to correctly perceive the nicotine risks associated with birth defects, while OB/GYNs surprisingly misidentified them more than other specialties.

"Correcting misperceptions in medicine should be a priority given the FDA's proposed nicotine-centered framework that includes reducing nicotine content in cigarettes to nonaddictive levels while encouraging safer forms of nicotine, like nicotine-replacement therapies, to help with smoking cessation, or non-combustible tobacco, like smokeless tobacco for harm reduction," said study author Cristine Delnevo, director of the Rutgers Center for Tobacco Studies and Professor at the Rutgers School of Public Health. The study was published in the *Journal of General Internal Medicine*.

A Potential New Treatment for DMD

U.S. investigators working with colleagues in Italy have discovered a promising new approach to the treatment of Duchenne muscular dystrophy (DMD). The research builds on previous work by the team showing that HDAC inhibitors (HDACi) could be effective in regenerating muscle and preventing fibrosis. Drug trials have been limited, however, by adverse side effects.

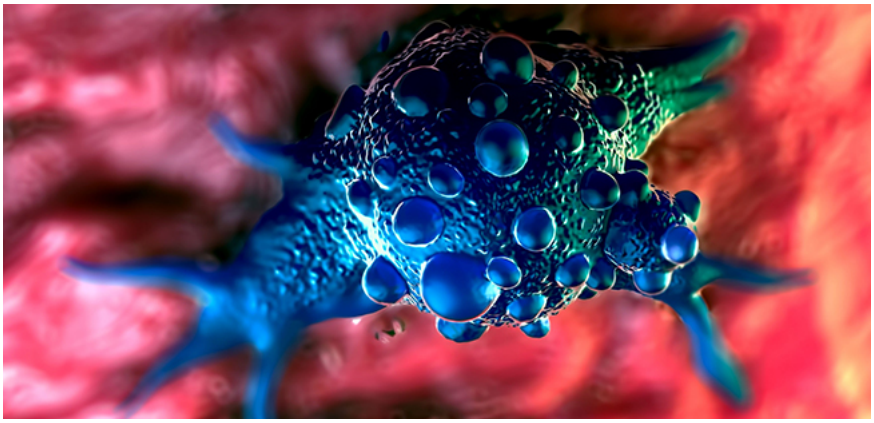
In the current study, the team found that using extracellular vesicles to transfer the benefits of the medicine allowed them to deliver an HDACi in a lower dose that causes fewer side effects. "We believe this novel approach of using pharmacologically corrected extracellular vesicles may be used to safely deliver drugs such as HDACi directly to dystrophic muscles to obtain the beneficial action that would otherwise only be achieved at higher, toxic doses," said study author Pier Lorenzo Puri, MD, a professor in the Development, Aging and Regeneration Program at Sanford Burnham Prebys in La Jolla, CA. The study appeared in *EMBO Reports* earlier this year.

COVID-19 Readmissions

Data from the first three months of the COVID-19 pandemic in the Philadelphia area have shown that one in 10 patients who go to the emergency room for the condition end up back in the hospital within a week. The study looked at 1,419 patients who went to an emergency department between Mar. 1 and May 28 were discharged and tested positive for COVID-19 in the seven days surrounding that visit. Overall, 4.7% returned to the hospital and were admitted within just three days of their initial visit, and an additional 3.9% were hospitalized within a week. Together, that reflected a readmission rate of 8.6%.

Certain patients were more likely to return than others. Specifically, those over age 60 were five times more likely to return than those between the ages of 18 and 39. People age 40 to 59 were three times more likely to return than the younger age group. Patients of any age with low pulse oximetry readings were about four times more likely to require hospitalization upon return compared to those with higher readings. Patients with fevers were more than three times as likely to need hospitalization as those without.

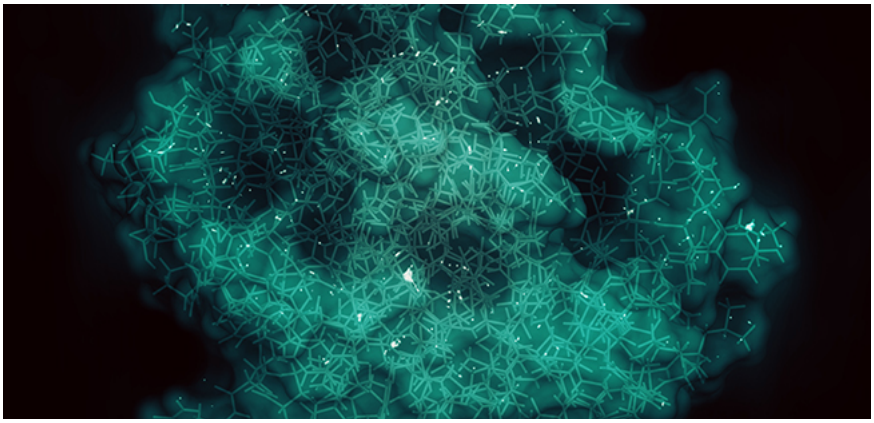
"It can be difficult to make this diagnosis and send patients home without knowing if they will get sick in the coming days," said study author Austin Kilaru, MD, from Penn Medicine. "This study gives clinicians a few signposts to know how often and when patients may need to return, and what risk factors to pay attention to." The research was published in *Academic Emergency Medicine*.



Bladder Cancer Patients Fare Better if They Kick the Habit

A systematic review and meta-analysis of the literature conducted by researchers from Keck Medicine of USC and elsewhere suggests smokers who undergo a radical cystectomy for bladder cancer have worse outcomes. The investigators looked at 17 studies that reported on the impact of tobacco smoking on chemotherapy response and survival outcomes of 13,777 patients following the procedure. Of these patients, 40.8% were active smokers at the time of the surgery, 14.1% were former smokers, and 45.1% had never smoked or were not smoking at the time of the surgery.

Active smokers had a worse response to chemotherapy and higher mortality rates, both in general and specifically from bladder cancer. They also had a higher rate of bladder cancer recurrence than patients who never smoked or were not smoking at the time of surgery. Former smokers fared worse in these categories than those who had never smoked, but the differences were less significant.
The researchers believe bladder cancer patients should be advised to quit smoking. "The research suggests that as long as a person is not smoking at the time of chemotherapy and surgery, they might do better," said study author Giovanni Cacciamani, MD. The study was published in the *Journal of Urology*.



NETs May be Target for COVID-19 Drugs

What drives lung pathology in COVID-19? According to researchers publishing in the *Journal of Experimental Medicine*, the answer may lie in the sticky webs of DNA released from neutrophils. They believe these webs, known as neutrophil extracellular traps (NETs), may be causing much of the tissue damage associated with the virus. Blocking the release of these DNA webs could be a new target for drugs to manage severe forms of the disease.

The pathology involved was explained in two studies in the same issue. In one, investigators from Belgium examined the lungs of patients who had succumbed to COVID-19 and found large numbers of

NETs dispersed throughout the organ. Many of them were in the airway compartment, where they often appeared to almost completely obstruct the small bronchioles and alveoli. They were also formed at sites of inflammation located in the interstitial compartment between the alveoli and blood vessels, and could even be seen in the blood vessels themselves near tiny blood clots known as micro-thrombi that can restrict blood flow through the lungs and are a common pathological feature of severe COVID-19.

In the second study, a team from Brazil also identified increased numbers of NETs in the lungs of patients with severe COVID-19 and found that NET formation was elevated in their blood plasma as well. They determined that SARS-CoV-2 can trigger the release of NETs by infecting neutrophils and replicating inside of them. NETs released from neutrophils infected by SARS-CoV-2 induced the death of lung cells grown in the lab, but the researchers believe cell death can be prevented if NET release is inhibited or the NETs are degraded by an enzyme that destroys their DNA.

Oral Steroids Linked to Complications in Children

Researchers from the Rutgers Robert Wood Johnson Medical School who examined the medical records of more than 933,000 children between the ages of one and 18 have found those who took oral steroids were more likely to develop high blood pressure, diabetes, and blood clots. The finding was strongest in kids who took higher doses and in those suffering from autoimmune diseases.

Fortunately, children with asthma were less likely to experience these adverse events, and the researchers emphasize the overall risk was minimal. “While children receiving high-dose steroids were at substantially higher risk for developing diabetes, high blood pressure, or blood clots relative to children not taking these medicines, the absolute risks of these complications were still small,” said study author Daniel Horton. “The vast majority of children taking brief courses of steroids for conditions such as asthma, for instance, will not experience these complications.” The study was published in a recent edition of the *American Journal of Epidemiology*.

JUUL Users Not Likely to Cite Quitting Smoking as a Reason for Use

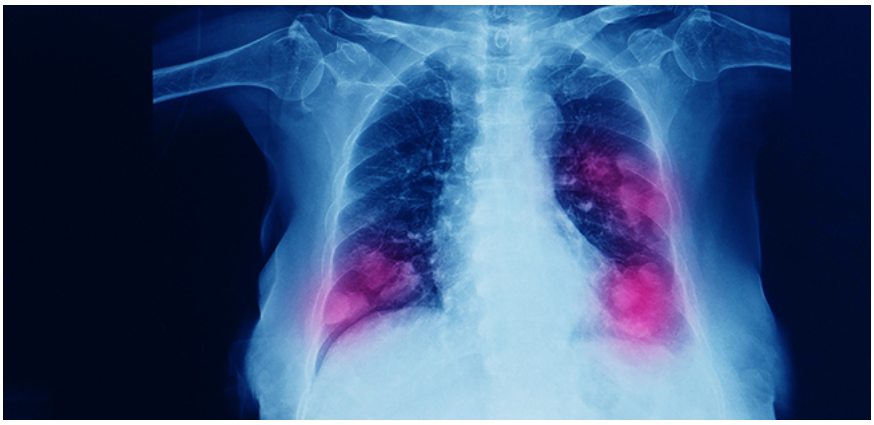
E-cigarette makers like to claim people use their products to help them quit smoking traditional cigarettes. A new study from U.S. researchers calls that claim into question. In a study of tweets made by JUUL users, they found little evidence that vapers were vaping in order to kick the habit.

The study involved a manual analysis of more than 4,000 tweets, with results showing 79% specifically mentioned JUUL or JUUL-related products and accessories. Of these, 57% referred to first-person usage such as, "I left my JUUL at the party last night." Overall, there were significantly more positive tweets about JUUL, such as "I love JUUL," than negative tweets like "I will never touch JUUL again!" Only 45 tweets, or 1% of the total, mentioned JUUL as a means of smoking cessation; just 216, or 7%, referred to any possible health benefits or concerns associated with the product.

The study was published by the *Journal of Medical Internet Research-Public Health & Surveillance* last fall.

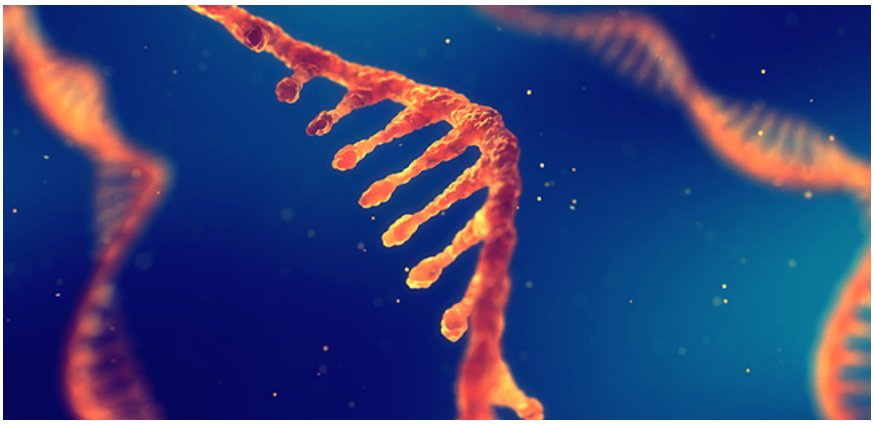
New Target for Fibrosis and Lung Remodeling

A new discovery from investigators at the La Jolla Institute for Immunology may one day lead to better treatments for people suffering from fibrosis and tissue remodeling of the lungs. The team identified a protein called TL1A that drives fibrosis in several mouse models, triggering tissue remodeling and making it harder for lungs and airways to function normally. The protein is from the family of proteins known as tumor necrosis factors (TNF) and tumor necrosis factor receptors (TNFR), which play a role in inflammatory and autoimmune diseases. TL1A has been linked to allergic reactions. "Our new study suggests that TL1A and its receptor on cells could be targets for therapeutics aimed at reducing fibrosis and tissue remodeling in patients with severe lung disease," said study author Michael Croft, PhD. The study appeared in the *Journal of Immunology* earlier this year.



NSCLC Drug Improves Disease-Free Survival

New research in *The New England Journal of Medicine* shows treatment with the targeted therapy osimertinib following surgery continues to significantly improve disease-free survival (DFS) in patients with early-stage, non-small cell lung cancer (NSCLC) with epidermal growth factor receptor gene mutations. The updated results come from a Phase 3 randomized trial led by researchers at the Yale Cancer Center. Two-year DFS with osimertinib was 89%, compared to 52% for patients who were randomized to the placebo. Side effects of the drug were considered manageable. Overall, patients treated with osimertinib had a 79% reduction in the risk of their cancer returning or death. The investigators plan to continue following the patients to gauge overall survival outcomes.

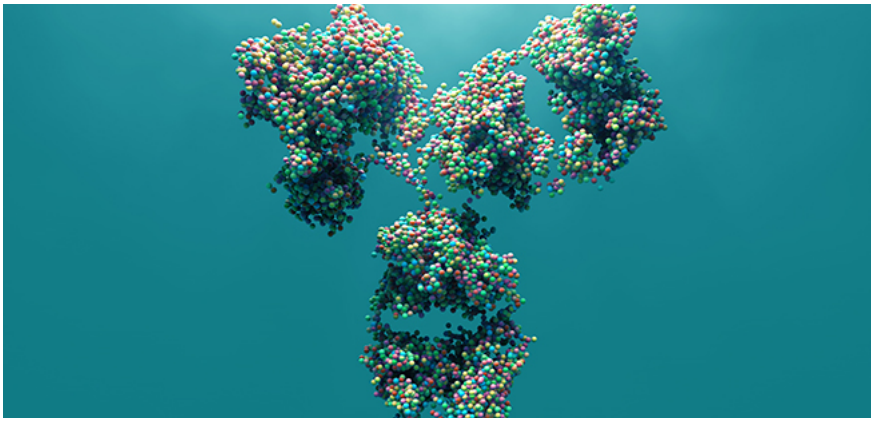


Biomarker for Severe COVID-19

Korean researchers believe they have uncovered a biomarker that could help identify which patients with COVID-19 are destined to develop a severe form of the disease.

The investigators specifically looked at ribonucleic acid (RNA) sequencing data from a public database published by Chinese researchers that was extracted from individual airway cells of healthy controls and of mildly and severely ill patients with COVID-19. The analysis found an association between neutrophils and special cell receptors that bind to the steroid hormone glucocorticoid.

The authors believe this association could serve as a biomarker for predicting the course of the disease. “Our study could serve as a springboard toward more accurate and reliable COVID-19 treatments,” said lead investigator Professor Heung Kyu Lee. The study appeared in a recent edition of *Frontiers in Immunology*.



Antibodies May Treat Influenza B

Scientists at Washington University School of Medicine in St. Louis and Icahn School of Medicine at Mount Sinai have discovered two antibodies that protect mice from lethal infections of influenza B virus. They believe the antibodies could form the basis for a broad-spectrum drug that might be capable of treating nearly all cases of the flu.

"Last year, influenza B viruses attacked much earlier in the season than usual and resulted in significant illness and death among children," said study author Ali Ellebedy, PhD, an assistant professor of pathology and immunology at Washington University. "I'm hopeful that these antibodies, which neutralized every strain of influenza B that we tested, could be developed into drugs to treat patients with severe influenza B infection."

The authors note that 187 children in the United States died of influenza last season, and nearly two thirds of them had influenza B. It was the worst flu season for children in a decade. Between 24,000 and 62,000 adults also died of flu during the 2019–2020 season, but only about a quarter of the adult deaths were due to influenza B. The study was published in *Immunity*.

COVID-19 Hits Some Areas Harder Than Others

Using a geocoding approach that allowed them to link public health data with neighborhood socioeconomic factors, researchers from the Harvard T.H. Chan School of Public Health have found people living in certain areas are more likely to be affected by COVID-19. The study was conducted in New York and Illinois and looked at COVID-19 deaths, confirmed cases, and percent positive cases as of May 5. At that time, New York and Illinois were considered hot spots for the virus.

Among the specific findings —

• County-level data showed higher rates of COVID-19 deaths in areas with more people living in poverty, increased household crowding, and more people of color.
• The COVID-19 death rate was about five times higher in counties with the highest percentage of people of color.
• In Illinois, the rate of COVID-19 diagnosis was five times higher in ZIP codes with the highest percentage of people of color.
• ZIP code data from New York City showed similar disparities, even with the city's much higher infection rates.
• The rate of positive COVID-19 tests was more than 60% higher in ZIP codes, with the highest percentage of people with poverty-level incomes.

The study was published by the *Journal of Public Health Management and Practice*.

Antifungal Drugs Improve Lung Transplant Survival

In the largest study conducted on the topic to date, researchers publishing in the *Annals of the American Thoracic Society* have reported that antifungal preventive medications cut the mortality risk in half in the first year of lung transplantation. The Mayo Clinic investigators base that finding on a review of lung transplant outcomes from 2005 to 2018. Of the 667 patients in the trial, 385 (57.8%) received antifungal treatment, and 282 (42.3%) did not. Sixty-five patients died during the study, and the risk of death was about twice as high in those not receiving the medications.

"Use of antifungal preventive medications in lung transplant patients is increasingly common, but no studies have established its efficacy," said study author Kelly Pennington, MD. "This is the first study to demonstrate a mortality benefit associated with the use of antifungal prophylaxis in lung transplant patients." The physician notes, however, that the study did not reveal which lung transplant patients receive the most benefit from the treatment, so more research is needed.

A Kinder, Gentler UVC?

According to Japanese investigators publishing in the *American Journal of Infection Control*, a safer form of ultraviolet C (UVC) light may be able to kill the coronavirus just as effectively as the 254-nm UVC light increasingly used to disinfect health care facilities today. Unlike 254-nm UVC, 222-nm UVC, also known as "far UVC," is less likely to damage human tissues and could thus potentially be used in public spaces where people are present. The 254-nm UVC lamps currently in use are generally only used in empty rooms. However, the researchers emphasize that their findings, which demonstrated that 99.7% of a SARS-CoV-2 viral culture was killed after a 30-s exposure to 222-nm UVC irradiation, come from an in

vitro study. They stress that 222-nm UVC must undergo real-world studies before being deemed safe and effective.

OSA Risk in Patients with Epilepsy

A new study in the journal *Epilepsy & Behavior* finds that people suffering from generalized epilepsy who have seizures arising from both sides of the brain simultaneously have a higher risk of obstructive sleep apnea (OSA) than those with focal epilepsy, where seizures emanate from one area of the brain only. The Rutgers researchers arrived at that conclusion after looking at 115 patients, 27 with generalized epilepsy and 88 with focal epilepsy. Older age, a higher body mass index, and a history of high blood pressure were associated with a higher risk of OSA in these patients as well. However, no differences in daytime sleepiness were seen between the different types of epilepsy. "Possible reasons for higher risk of OSA in people with generalized epilepsy include greater brainstem dysfunction, altered control of the muscles of the upper airway, instability in the respiratory control system, and differences in the anatomy of the upper airway," said study author Matthew Scharf.

Strange but True . . .

Say what? Researchers from Russia have a new theory about how SARS-CoV-2 can be spread by talking. They believe the problem lies with aspirated consonants, such as "p," "t," and "k," because saying them causes a forceful puff of air to be released into the atmosphere. The investigators compared COVID-19 rates among people who speak languages with a lot of aspirated consonants with those who speak languages with fewer aspirated consonants. The rates were higher for the former group than the latter.

Zzzzzz: According to investigators from Wake Forest Baptist Health, people who suffer from insomnia might benefit from listening to their own brainwaves. They used a high-tech mirroring tool called HIRREM to monitor brainwaves and software algorithms to translate them into audible tones. Those tones were then played through ear buds to people with insomnia. Four months following the intervention, 78% reported no significant insomnia symptoms.

Blast from the past? Research conducted by the COVID-19 Host Genetics Initiative has identified a region on chromosome 3 that influences whether a person infected with SARS-CoV-2 will become severely ill. A new study published in *Nature* has traced that genetic tendency back some 50,000 years. Investigators found a Neanderthal from southern Europe that carried a nearly identical genetic region.

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.

Industry Watch

ARDS research award
A new ATS/CSL Behring Research Award in acute respiratory distress syndrome will provide $50,000 in funding for one year, reports the ATS Research Program sponsored by the American Thoracic Society (ATS). “ARDS continues to have an enormous public health impact, with high mortality and sequelae in survivors, including long-term physical, cognitive, and mental health impairments,” said Renee Stapleton, MD, PhD, ATSF, chair of the Critical Care Assembly of the ATS. “The partnership between the ATS and CSL Behring to offer this grant is an amazing opportunity for young critical care investigators that will undoubtedly have a significant impact on the field and on the lives of patients and their loved ones.”

SARS-CoV-2 antibody study gets underway
University of Chicago Medicine is launching a clinical trial to examine a potential antibody against the SARS-CoV-2 spike protein. The Phase 2 BLAZE-1 trial will recruit 22 participants to be treated with the LY-CoV555 antibody developed by Eli Lilly & Co. in collaboration with AbCellera. The antibody was first identified by scientists at the National Institute of Allergy and Infectious Diseases and AbCellera in a blood sample from a U.S. patient who had recovered from COVID-19. The neutralizing monoclonal antibody targets and binds to the spike protein on the surface of the SARS-CoV-2 virus, preventing it from attaching to and entering human cells. The safety of LY-CoV555 was evaluated in a Phase 1 clinical trial that started in June 2020. This Phase 2 trial will expand the safety testing and examine the effects of the antibody on reducing viral load, clinical symptoms, and signs of infection in patients with mild to moderate cases of COVID-19.

Lung cancer drug moves forward
New preclinical research from the University of Texas MD Anderson Cancer Center and Navire Pharma, Inc. (an affiliate of BridgeBio Pharma, Inc.) has found that the novel SHP2 inhibitor IACS-13909 is able to overcome multiple therapeutic-resistance mechanisms in non-small cell lung cancer (NSCLC), suggesting a possible new approach to treating cancers that have developed resistance to the targeted EGFR inhibitor osimertinib. According to data published in *Cancer Research*, IACS-13909 is a potent and selective allosteric SHP2 (Src homology 2 domain-containing phosphatase) inhibitor. Based on these data, Navire plans to launch a clinical study of SHP2 inhibitors by the end of 2020 at multiple U.S. sites, including MD Anderson.

Point-of-need COVID-19 test in development

Last May, Arizona State University (ASU) researchers produced one of the first FDA-approved saliva-based COVID-19 tests, with results delivered in 24–48 hours. Thanks to a $5.2 million CARES Act grant issued by Governor Doug Ducey's office and another $860,000 from the Arizona Department of Health Services, they are now taking that work to the next level by building a new, portable, saliva-based testing device that will deliver results in as little as 20 minutes. Users will provide a saliva sample on a computer chip that will quickly detect whether the virus is present. "ASU continues to lead the way in developing new technologies to help us respond to COVID-19 and protect Arizona communities," said Governor Ducey. "We're excited to work with our university partners on expanding access to COVID-19 testing, including investing in ASU's groundbreaking point-of-need test."

FDA awards Breakthrough Therapy designation to EoE drug

According to Regeneron Pharmaceuticals, Inc., and Sanofi, the FDA has granted Breakthrough Therapy designation to Dupixent (dupilumab) for the treatment of patients age 12 and older with eosinophilic esophagitis (EoE). The designation is based on positive results from Part A of a Phase 3 trial in patients with EoE, which found that patients treated weekly with Dupixent 300 mg over 24 weeks experienced a reduction in symptoms, esophageal inflammation, and abnormal endoscopic findings in the esophagus. Additional patients are being enrolled in Part B of the trial, and some patients will continue in a 28-week extended active treatment period (Part C) after completing either Part A or Part B. There are currently no FDA-approved medicines for EoE.

New telehealth solution for COPD, COVID-19

Clear Arch Health, a leading provider of remote patient monitoring and mobile personal emergency response system solutions, has announced the addition of new connected health devices to ensure timely clinical touchpoints for COPD and COVID-19 management. The new peripherals include a thermometer, peak flow meter, spirometer, and pulse oximeter, and will provide clinical teams access to patient-generated health data to better manage high-risk patient populations and those who may be delaying their care. "Chronic conditions, such as COPD, which is the fourth leading cause of death in the U.S., have an impact on a patients' quality of life and life expectancy. Adding COVID-19 to the mix can pose even greater health risks," said Jerriene Cordova, director of Telehealth Programs for Clear Arch Health. "By monitoring patients in the home and expanding our peripheral ecosystem, we are better positioned to support patients with multiple conditions, extend our platform to address multiple use cases, and better position health care clients to expedite care."

Nicotine addiction drug in development

Scientists at Sanford Burnham Prebys Medical Discovery Institute, Camino Pharma, LLC, and the University of California San Diego School of Medicine have been awarded an $11.4 million grant from the National Institute on Drug Abuse to advance a novel drug candidate for nicotine addiction into first-in-human Phase 1 studies. The three-year grant will fund early clinical development of SBP-9330, a small molecule that targets a receptor called metabotropic glutamate receptor 2, which leads to reduced levels of glutamate, a neurotransmitter linked to nicotine addiction and relapse behavior. The drug would be a first-in-class medication to help people quit smoking.

Interactive COVID-19 map from the Mayo Clinic

The Mayo Clinic has introduced a tracking tool that features the latest COVID-19 data for every county in all 50 states and Washington, D.C. The interactive map presents key data and trends in an easy-to-use format, including the total number of cases by county and state, new cases per day, positive test rates, fatality rates, trends over time, and Mayo Clinic guidance on how to take action. "COVID-19 infections continue to rise and fall in many areas of the country, and information at the local level on the prevalence of disease and future trends are more important than ever to help people prevent the spread of infection," said Henry Ting, MD, a cardiologist, health services researcher, and educator at the Mayo

Clinic. “This interactive map, enriched with Mayo Clinic expertise, is designed to be easy to use, with the most current data available and correlated with the latest Mayo Clinic guidance.”

New cystic fibrosis treatment gets the go-ahead

The FDA has granted Orphan Drug and Rare Pediatric Disease Designations to Spirovant Sciences’ lead product candidate, SPIRO-2101, for the treatment of cystic fibrosis. The inhaled adeno-associated virus (AAV) gene therapy is designed to replace a defective cystic fibrosis transmembrane conductance regulator (CFTR) gene in patients with class 1 mutations or in those who are unable to tolerate an existing CFTR modulator. SPIRO-2101 contains an evolved AAV capsid engineered to have high tropism to human airway epithelia. The treatment is designed for patients who currently have no approved modulator therapies.

Big data resource

Scientists at Sanford Burnham Prebys Medical Discovery Institute have released Coronascape, a customized version of the Metascape bioinformatics platform that removes big-data analysis hurdles for biologists. Coronascape will enable scientists to interpret the growing body of big data related to COVID-19. ”A significant number of publications on SARS-CoV-2 contain large-scale OMICs data, which is not readily interpretable and actionable by many researchers, creating a big-data bottleneck,” said Sumit Chanda, PhD, director of the Immunity and Pathogenesis Program at Sanford Burnham Prebys. “Coronascape provides a central clearinghouse for scientists to laser-focus their OMICs analysis and data-mining efforts to find effective drug targets, therapies, and vaccines for COVID-19.” “OMIC” refers to those sciences that end in “-omic,” such as genomics, proteomics, and metabolomics, among others.

COVID-19 study to look at nursing home spread

Case Western Reserve researchers have received a $2.3 million grant from the National Institutes of Health to study how nursing home infections spread. The work is expected to help explain the rapid spread of COVID-19 in nursing homes across the country. “We’ll be looking at the magnitude of the problem and how long-term care residents transmit and cope with the disease,” said David Canaday, a professor from the Division of Infectious Disease at the university’s School of Medicine. “If we can better understand how to minimize spread in these facilities, we may also be able to optimize interventions.”

New smoking cessation drug outperforms varenicline

According to Achieve Life Sciences, Inc., the RAUORA trial evaluating the effectiveness and safety of cytisinicline compared to varenicline as a smoking cessation aid in 679 indigenous New Zealanders has found that cytisinicline met the pre-specified non-inferiority endpoint and was trending toward superiority, with an absolute risk difference of +4.29 in favor of cytisinicline. Specifically, continuous abstinence rates at six months, verified by exhaled carbon monoxide, were 12.1% for cytisinicline compared to 7.9% for varenicline. Subjects in the cytisinicline arm were approximately one and a half times more likely to have quit smoking at six months compared to subjects who received varenicline. The study was presented at the annual meeting of the Society for Research on Nicotine and Tobacco Europe.

We Appreciate Our 2020 AARC Times Article Reviewers!

The AARC Times staff offers our sincere thanks to the people who took time to review the clinical articles in our publication throughout this year. Your special expertise and dedication to the respiratory care profession were critical to our ability to publish informative articles for the respiratory care professional. Thank you, reviewers!

Claire Aloan, MSEd, RRT, RRT-NPS, FAARC
Becky Anderson, RRT
Sherry Babic, RRT
Rich Branson, MSc, RRT, FAARC, FCCM
Tom Cahill, RRT
Scott Cerreta, BS, RRT
John Davies, MA, RRT, FCCP
Matthew Davis, BS, RRT
Samantha Davis, MS, RRT, RRT-NPS, CHSE
Dabney Eidson, BS, RRT, RRT-NPS
Karen Gregory, RRT, RN, FAARC
Terry Forrette, MHS, RRT, FAARC
Mary Hart, MS, RRT, AE-C, FCCP, FAARC
Carl Hinkson, MS, RRT, RRT-AACS, FAARC
Linda Hopper, BS, RRT
Cheryl Hoerr, MBA, RRT
Anne Marie Hummel
Jon Inkrott, RRT, RRT-ACCS
Renato Galindo, BSRC, RRT, CPFT
Susan Gallo, FAARC
Meena Khan, MD
Deb Koehl, MS, RRT, RRT-NPS, AE-C, FAARC
Keith Lamb, BS, RRT, RRT-ACCS, FCCM
Aaron Light, DHSc, RRT, RRT-ACCS, FAARC
Mark Mangus, BSRC, RRT, FAARC
Mary Martinasek, PhD, RRT, RRT-NPS, AE-C
Curt Merriman, BA, RRC, CPFT
Shelly Mishoe, PhD, RRT, FAARC

Connie Mussa, PhD, RRT
Natalie Napolitano, MPH, RRT, RRT-NPS, FAARC
Scott Reistad, BA, RRT, FAARC
Dan Rowley, MS, RRT, RRT-NPS, FAARC
Tony Ruppert, MS
Georgianna Sergakis, PhD, RRT, FAARC
Jessica Schweller, MS, APRN-CNP, RRT, RRT-SDS
Shawna Strickland, PhD, CAE, RRT, RRT-NPS, RRT-ACCS, AE-C, FAARC
Donna Tanner, BSRC, RRT
Brian Wattier, MEd, RRT
Jennifer Watts, MSc, RRT, RRT-NPS, C-NPT
Tonya Winders, MBA