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CMS to decide the future of home ventilation coverage

More than a decade in the making, new federal guidelines for coverage on noninvasive positive pressure ventilation in the home for patients with COPD could transform access to care

BY NATHAN PETTENGILL

In many ways, the respiratory health community received a big win in March 2025 when the Centers for Medicare & Medicaid Services (CMS) released a proposed decision memo on coverage for noninvasive ventilation devices used by millions of Americans with chronic COPD.

Nicholas Hill, MD, who led a CHEST-initiated COPD technical expert group in submitting recommendations to the government, said he was "thrilled" after reviewing the "Noninvasive Positive Pressure Ventilation (NIPPV) in the Home for the Treatment of Chronic Respiratory Failure consequent to COPD" draft. Indeed, Peter Gay, MD, FCCP, who wrote the executive summary for the policy recommendations, said the draft guidelines include almost everything that was recommended.

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This edition of CHEST Physician *was approved and printed in May 2025; however, CMS is expected to complete its national coverage analysis on June 9, 2025. Therefore, some details in this article may be outdated upon delivery. For the most up-to-date version of the story, please visit chestphysician.org.*

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CHEST Physician, an official publication of the American College of Chest Physicians, provides cutting-edge reports on timely news, research, and clinical advances in the world of chest medicine. Regular columns feature the areas of pulmonary, critical care, and sleep medicine, as well as association news and updates from CHEST leadership.

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FROM THE PRESIDENT

Column

Inspiring the next CHEST leader

As we head into the summer months, it's hard to believe we're already halfway through 2025. Before we know it, October will be here, and we'll be together in Chicago for CHEST 2025 (October 19 to 22). I always look forward to the CHEST Annual Meeting, and this is really going to be one to remember as CHEST celebrates its 90th anniversary.

John Howington, MD, MBA, FCCP

Thinking about the humble beginnings of CHEST in 1935 has me reminiscing about where I started in CHEST. To be quite honest, as a thoracic surgeon, it wasn't an association that was on my radar. But a colleague from my general surgery training, Sandra Willsie, MD, was the Scientific Program Committee Chair of CHEST 1997 and asked me to co-moderate a session at the annual meeting in New Orleans—and I accepted. As it turned out, the senior moderator had travel issues, and I moderated the session on my own just four months out of my thoracic surgery fellowship. I enjoyed the meeting and met several young thoracic surgeons there. Because of the opportunity given to me by Dr. Willsie, my foot was already in the door.

Shortly thereafter, Alvin Thomas Jr., MD, FCCP, CHEST Past President, who was the Chair of the Scientific Presentation and Awards Committee at the time, asked me to join the committee to add a surgeon's perspective.

I was also fortunate enough later to have been given additional opportunities at CHEST from Gerard Silvestri, MD, Master FCCP; Patricia Rivera, MD, FCCP; Frank Detterbeck, MD, FCCP; John Studdard, MD, Master FCCP; and so many more who brought me to the role I hold today. They brought me into the Networks, invited me to take part in writing guidelines, encouraged me to apply for leadership positions, and provided countless other opportunities.

To them, I want to say…

Thank you for helping me find my home within CHEST.

To you, I say, please use this as inspiration to set your course as the next leader of CHEST. The CHEST Annual Meeting is around the corner, and it is rife with opportunities to seize. Funding may be a challenge this year for a lot of institutions; do what you can to support fellows looking to attend the meeting by advocating for resource reallocation. Make an introduction during the Networks mixer or any of the planned social events that can be intimidating for first-time or second-time attendees. A small act of support can go a long way in someone's career.

We are an organization that supports one another and strives to improve patient care by working together. I'm so happy that I found my home within CHEST, and I hope that you help others find their homes here too, so they can experience the wonderful, inspiring community that is this organization.

With sincere regards,

John Howington

John Howington, MD, MBA, FCCP
President, American College of Chest Physicians

CHEST is proud to be a welcoming community, boldly committed to advocating for equitable health and professional outcomes for all. We honor the rich tapestry of the human experience and uphold the importance of joyful celebration both during June (Pride Month) and throughout the year. We look forward to continuing the celebration with our LGBTQ+ Interest Group and many others during the Cultures and Communities Reception at CHEST 2025 in Chicago. Until then, search "Interest Groups" on the CHEST website to learn more.

Develop Stronger Nurse and Patient Navigators to Elevate Lung Cancer Screening and Care

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Clinical Program Manager, Lung Cancer Screening
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Inside

In memoriam

CHEST has been informed of the following deaths of CHEST members. We remember our colleagues and extend our sincere condolences.

Steven D. Brown, MD, MS
Member, Palliative and End-of-Life Care Committee

F. Howard Cost Jr., MD

Column

Ketamine vs etomidate for intubation in patients who are critically ill

BY JUSTIN T. LACKEY, MD; JOHN P. GAILLARD, MD, FCCP

Despite being a frequently performed procedure in emergency departments and ICUs, endotracheal intubation carries significant risk for morbidity and mortality. As many as 45% of patients experience a significant adverse event in the peri-intubation period, with the most frequent being cardiovascular instability. As many as 3% of patients will suffer cardiac arrest within 30 minutes of intubation. There are a number of both patient- and procedure-related factors that can contribute to hemodynamic decompensation. Many of these factors are not immediately modifiable, but the choice of induction medication may be an opportunity to mitigate risk for hypotension. Ketamine and etomidate are two commonly used medications for sedation for endotracheal intubation and are often selected for their favorable hemodynamic profile compared with propofol.

ETOMIDATE

Etomidate is a substituted imidazole that produces rapid-onset, short-duration sedation. It has a favorable hemodynamic profile with minimal effects on heart rate, blood pressure, or cardiac output. However, etomidate is known to suppress cortisol production, which may lead to functional adrenal insufficiency in patients receiving a continuous infusion. However, the effects of a single dose of etomidate have been less definitively established. Current evidence suggests there is adrenal suppression in the first one to two days after a single induction dose of etomidate, but the clinical impact of this effect is not entirely clear. This effect appears to be most pronounced in patients with sepsis. More recently, there has been a concerning relationship between etomidate use and mortality. The results are not definitive, and it is not clear if this association is mediated by functional adrenal insufficiency.

KETAMINE

Ketamine is a cyclohexanone that interacts with numerous central nervous system receptors, including NMDA, glutamate, and opioid. It has a similarly rapid onset of action but with longer duration of action compared with etomidate. Ketamine increases the activity of endogenous catecholamines via multiple mechanisms, leading to an increase in blood pressure, heart rate, and cardiac output in most patients. Historically, there have been concerns regarding the side effects of ketamine, including increased intracranial pressure and myocardial suppression. Recent studies do not suggest that ketamine has a significant effect on intracranial pressure, and ketamine may increase cerebral perfusion pressure due to its hemodynamic properties. Additionally, there is some enthusiasm for the potential neuroprotective effects of ketamine given its ability to suppress cortical spreading depolarizations, one proposed mechanism of secondary damage in patients with acute brain injury.

A final frequently cited concern with ketamine is direct negative inotropy, which may become relevant in patients treated with exogenous catecholamines or in catecholamine-depleted states. However, the clinical significance of these effects is not clear given the complex interplay of catecholamine effects on preload and afterload in conjunction with the direct effects of ketamine on the myocardium. These myocardial effects are relatively short lived, and it seems that even in patients with catecholamine-dependent septic shock, ketamine use is safe. It may be reasonable to consider alternative agents in the setting of significant cardiac dysfunction, but for the majority of patients requiring intubation in the ICU, these effects are not likely to produce significant instability that cannot be mitigated with additional support.

THE AGENT OF CHOICE?

There have been multiple attempts to directly compare the efficacy and safety of ketamine and etomidate. Observational data in this population are particularly problematic given both medications are frequently chosen in patients who are unstable due to their perceived hemodynamic neutrality. Several randomized clinical trials have been performed without demonstrating superiority of either agent. Multiple meta-analyses have also been performed with variable outcomes depending on the chosen primary end point. When focusing on mortality, it is possible ketamine has a small advantage. When focusing on peri-intubation hemodynamic parameters, etomidate seems to have a small advantage. Reasonable arguments regarding the limitations of both of these conclusions have been made. The one thing that does seem consistent is an increased frequency of some degree of adrenal suppression with etomidate use.

To date, there have not been data to definitively support either ketamine or etomidate as the agent of choice

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Column

Hope on the horizon for bronchiectasis

Targeted therapies, clinical trials, and pulmonary rehabilitation

BY COLIN SWENSON, MD

Bronchiectasis, a chronic and heterogenous lung condition marked by the abnormal widening and inflammation of the lower airways, has long been a challenging disease to manage. Its most common symptoms—persistent cough, frequent respiratory infections, and dyspnea—can severely impact a patient's quality of life, contribute to a high burden of care, and result in high health care utilization. Despite the growing body of knowledge around the disease, treatment options have traditionally focused on one-size-fits-all management strategies rather than targeted interventions. However, recent advancements in therapeutics offer a glimmer of hope for the millions of people affected by this often-debilitating condition.

A CHANGING PARADIGM

Traditionally, bronchiectasis management has involved airway clearance techniques, antibiotics to control periodic infections, and various forms of chest physiotherapy to address the underlying mucostasis that underpins the vicious vortex. While these strategies continue to be important treatment modalities, they do not address the underlying pathophysiologic pathways that ultimately lead to the airway injury and remodeling that characterize bronchiectasis. From a patient perspective, limited treatment options that have remained relatively unchanged for decades have offered little hope for meaningful improvement in long-term outcomes.

However, the past couple of years have seen significant strides in both pharmacologic and nonpharmacologic approaches, offering hope for better management and even potential improvements in lung function.

TARGETED THERAPIES

One of the most promising advancements in bronchiectasis treatment is the development of targeted therapies aimed at addressing key inflammatory pathways that perpetuate the disease. While disease phenotypes have long been recognized in other airway conditions, such as asthma and COPD, these are only now being described in bronchiectasis and are an important aspect of defining the treatable traits that enable precision treatment regimens.

The first class of nonsteroid drugs to broadly target the neutrophilic endobronchial inflammation of bronchiectasis were the macrolides. Long-term use of low-dose macrolides, such as azithromycin, has shown to reduce the frequency of exacerbations in patients with bronchiectasis, and these are generally well-tolerated. Studies have demonstrated that patients with bronchiectasis receiving treatment with macrolides experience fewer exacerbations, less severe symptoms, and an improved quality of life. However, the use of macrolides in this patient population has led to concern for the emergence of macrolide-resistant nontuberculous mycobacterial (NTM) infections, a condition for which this patient population is at risk.

Another treatment on the horizon are the drugs that target neutrophilic inflammation—specifically, the neutrophil serine proteases that characterize endobronchial inflammation in the majority of patients with bronchiectasis. Recently, the results of a phase 3 trial evaluating brensocatib, a novel dipeptidyl peptidase 1 (DPP1) inhibitor, were published, showing a significant reduction in bronchiectasis exacerbations and improvement in FEV_1. Another DPP1/cathepsin C inhibitor, BI1291583, showed favorable phase 2 results and has now entered a phase 3 clinical trial (NCT06872892).

Another targeted anti-inflammatory agent, ensifentrine, a dual inhibitor of phosphodiesterase (PDE) 3/PDE4 that is already approved by the US Food and Drug Administration for the treatment of COPD, is under investigation for patients with bronchiectasis (NCT06559150).

In addition, monoclonal antibodies designed to target specific proteins involved in the inflammatory pathways are showing great promise in clinical trials. For example, therapies targeting IL-4, IL-5, and IL-13—key cytokines in type 2 inflammation—are now being explored in those 20% of patients with bronchiectasis with this endotype. Itepekimab, an anti-IL-33, is also under investigation in this patient population (NCT06280391).

Lastly, cystic fibrosis transmembrane conductance regulator (CFTR) dysfunction, both innate and acquired, is being more closely evaluated in those with bronchiectasis. Recent case series and a pilot trial are illustrating and evaluating the utility of highly effective CFTR modulator therapy in patients with bronchiectasis who carry a single mutation.

Taken as a whole, these clinical trials represent a paradigm shift in disease management and demonstrate the significant momentum toward addressing the treatable traits of this heterogeneous disease.

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to facilitate endotracheal intubation in patients who are critically ill. The relative stability of these medications is demonstrated by the inconsistency of the observed results. The different conclusions seen, depending upon the specific outcome of interest and in slightly different populations, indicate a small effect size with relative equivalence between the two agents. Selection of the appropriate agent is likely still best driven by individual patient factors and anticipated tolerance of the potential side effects of either agent. Additional data to guide practice are anticipated from the Randomized trial of Sedative choice for Intubation, which is actively enrolling patients across multiple centers, with a primary end point of all-cause, in-hospital mortality at 28 days. Trial registration indicates an anticipated enrollment nearly equal to the combined patients enrolled in all previous prospective studies. ●

All references are available online at chestphysician.org.

OSA and the Alzheimer's continuum

Biomarkers, mechanisms, and the promise of intervention

BY MASRAI WILLIAMS, MD; ANDREW VARGA, MD, PHD

OSA is increasingly recognized not only as a cardiovascular risk factor but also as a potential contributor to neurodegeneration. As interest grows in early interventions for Alzheimer's disease (AD), sleep disorders like OSA are thought to be potentially modifiable factors in the AD continuum. AD pathology, including beta-amyloid (Aβ) biomarker framework introduced in 2018, formalizes this preclinical stage by categorizing pathology into amyloid, tau, and neurodegeneration, which are measurable via PET imaging, or in fluids such as spinal fluid or plasma. This framework enables uniform staging of disease, allows for early detection via biomarkers, and can help to recruit appropriate participants for AD-related trials.

OSA'S IMPACT ON AD BIOMARKERS

Increasing evidence now suggests that OSA may influence all three components of this framework. Both cross-sectional and longitudinal studies have demonstrated positive associations between untreated moderate to severe OSA and elevations in Aβ and tau burden on PET imaging in adults who are cognitively older, independent of age and apolipoprotein E-ε4 status. Additionally, experimental models using acute withdrawal of positive airway pressure (PAP) have demonstrated that even short-term reintroduction of OSA physiology can lead to significant increases in AD biomarkers. For example, one study found that acute discontinuation of PAP therapy in adherent patients with OSA led to measurable overnight increases in plasma Aβ and neurofilament light, a biomarker associated with neurodegeneration. Taken together, these findings suggest that OSA is a plausible accelerator of preclinical AD, and they demonstrate a highly dynamic relationship between sleep-disordered breathing and AD-related neuropathology. They underscore the potential for therapeutic interventions to modify disease risk and long-term cognitive outcomes.

MECHANISMS LINKING OSA TO AD PATHOPHYSIOLOGY

Multiple mechanisms may explain how OSA contributes to AD pathology. First, intermittent hypoxia and sleep fragmentation, hallmarks of OSA, may lead to increased cortical neuronal firing, driving the production of Aβ and tau and accelerating plaque and tangle formation. This excessive neuronal activity has been shown in both animal models and human studies to correlate with increased amyloid and tau production, particularly during periods of wakefulness. Additionally, glymphatic clearance of neurotoxic waste, most active during slow-wave sleep, is often disrupted in OSA, potentially reducing amyloid clearance. Contraction of brain cell volume during sleep is thought to expand the interstitial space, opening avenues to remove metabolic waste, including Aβ, through cerebrospinal fluid flow.

Furthermore, intermittent hypoxia can induce oxidative stress and neuronal injury in vulnerable regions like the hippocampus, triggering mitochondrial dysfunction, microglial activation, and apoptosis, all of which contribute to neurodegenerative cascades. These mechanisms can compound over time, potentially priming the brain for early neurodegenerative changes that precede clinical symptoms. Lastly, OSA-related systemic and central inflammation, through chronic immune dysregulation and blood-brain barrier compromise, are recognized as contributors to tau phosphorylation and neuronal degeneration. Importantly, this relationship is bidirectional. AD pathology disrupts sleep, especially slow-wave sleep, by damaging brain regions that regulate arousal and circadian rhythms, including potentially reducing the respiratory arousal threshold, making arousals from partial upper airway collapse more likely. Loss of slow-wave sleep is typically accompanied by increases in light non-REM stage 1 sleep, a greater arousal index, shorter sleep stage bout lengths, and greater wake after sleep onset, which can all occur independently of sleep apnea. Such sleep disruptions are thought to reduce glymphatic clearance, potentially accelerating Aβ and tau accumulation.

In summary, this chronic feedback loop between disrupted sleep and AD pathology may help explain the early presence of sleep disturbances in preclinical AD seen in some individuals.

TREATMENT

Treatment of OSA with PAP therapy can reduce sleepiness, improve quality of life, and reduce hypertension. While treatment of OSA has not yet been proven to slow AD pathology, emerging evidence suggests it can meaningfully alter cognitive outcomes. Observational studies have shown that individuals with OSA who use PAP therapy exhibit slower cognitive decline compared with individuals who remain untreated. In the Alzheimer's Disease Neuroimaging Initiative cohort, self-reported CPAP use in individuals with self-identified OSA was associated with a 10-year delay in the onset of mild cognitive impairment vs untreated OSA. Another study analyzing Medicare claims data from more than 53,000 older adults with OSA demonstrated that PAP treatment was associated with 22% lower odds of developing AD.

More recently, a randomized controlled trial by Xu and colleagues investigated the neurofunctional effects of PAP therapy on brain connectivity in patients with OSA defined by AHI3A > 15/hour. The study enrolled treatment-naïve participants who were randomly assigned to either therapeutic PAP or best supportive care as the control with primary outcomes assessed at six months. Resting-state functional MRI was performed at baseline and after the intervention to assess brain network changes, with a particular focus on the default mode network (DMN), a hub for memory consolidation and one of the earliest brain networks disrupted in AD. After six months, individuals in the therapeutic PAP group showed significant increases in functional connectivity within the posterior cingulate cortex and precuneus regions of the DMN compared with the control group. These changes were independent of improvements in daytime sleepiness, suggesting a direct impact of PAP on neural networks rather than simply behavioral alertness. This study provides further evidence that even short-term treatment with PAP can reverse functional network disruptions, reinforcing the idea that sleep interventions may offer a window of neuroplastic opportunity in individuals at risk for cognitive decline.

Lastly, in a separate clinical trial, Djonlagic and colleagues investigated the impact of three months of PAP therapy on sleep-dependent memory and sleep architecture in individuals with OSA. Patients with OSA performed significantly poorer than patients without OSA on an overnight word-pair declarative memory task. Subsequently, patients with OSA randomized to PAP treatment for three months demonstrated significantly improved overnight memory compared with

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HOW AI IS TRANSFORMING EARLY DETECTION OF LUNG DISEASE:

Insights from the Temple Healthy Chest Initiative

Lung diseases like cancer and COPD are often diagnosed too late—after symptoms develop and treatment becomes more complicated. Early detection can drastically improve outcomes, yet proven tools like low-dose computed tomography (LDCT) scans remain underused.

The Temple Lung Center is working to change that through the Temple Healthy Chest Initiative—a health-system wide screening program aiming to increase the rate of screening and improve patient outcomes. And now, with the application of artificial intelligence to increase scan analysis, this program is uncovering a wide range of conditions including COPD, osteoporosis, and cardiovascular disease—many of which might otherwise go undetected.

AI algorithms rapidly process massive amounts of imaging data and flag subtle abnormalities that may be difficult to detect with the human eye. This allows Temple's multidisciplinary team of physicians to identify potential issues earlier and more accurately. The result: faster diagnoses, improved patient outcomes, and a more efficient use of medical resources.

Temple also pairs LDCT scans with spirometry, as recommended in the 2024 Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines. This dual approach increases the likelihood of detecting chronic conditions like COPD and emphysema, as well as structural airway abnormalities such as bronchiectasis and mucus plugging.

By addressing multiple conditions in a single visit, Temple makes each scan more meaningful. Patients save time and receive deeper insights into their overall chest health.

The AI-enhanced screening process can detect a wide spectrum of diseases—COPD, heart conditions, osteoporosis, sleep apnea, and even other cancers—long before they become symptomatic. This technological copilot doesn't just improve diagnostic speed and accuracy; it transforms how health care teams approach preventive care.

Through the Temple Healthy Chest Initiative, the Temple Lung Center is setting a new standard for early detection. By integrating AI and advanced diagnostics into routine care, Temple is helping ensure that more patients get the life-saving information they need—earlier, faster, and more completely than ever before.

TEMPLE Healthy CHEST INITIATIVE

Lung Center Temple Health

CMS and home ventilation coverage // continued from cover

However, Dr. Hill, Dr. Gay, and others familiar with the document also sounded a note of caution. A last round of revisions will take place before the anticipated release of the national coverage analysis in June, and then we will have to wait an undetermined amount of time before we find out how final policies will be interpreted and enforced. Only then will the respiratory health field know if the document has furthered longtime goals of ensuring that the right ventilation device gets to the right patient at the right time.

COPD: WHY IT MATTERS

The World Health Organization estimates that COPD is the fourth-leading cause of death worldwide—leading to 3.5 million deaths in 2021—and the global community's eighth-leading cause of poor health, as measured by disability-adjusted life-years. Evidence suggests that a significant number of people across the globe live with undiagnosed COPD.

In the United States, an estimated 30 million people are believed to suffer from COPD—though perhaps half of this number are not diagnosed, according to the COPD Foundation. Chronic lower respiratory diseases, including COPD, are the sixth-leading cause of death in the United States, according to a 2022 report by the Centers for Disease Control and Prevention.

COPD also leads to deterioration of lung function and is often accompanied by gas function abnormalities when obstruction becomes severe. According to a 2022 survey by Statista, approximately 47% of respondents who had been diagnosed with COPD in the United States said that the condition had negatively impacted their social life and relationships with friends.

CMS AND NONINVASIVE VENTILATION

Noninvasive ventilation devices are known to improve quality of life and reduce mortality for patients with COPD.

Nicholas Hill, MD

Peter Gay, MD, FCCP

Because these noninvasive ventilation devices—both bilevel positive airway pressure (BPAP) and continuous positive airway pressure (CPAP)—can cost anywhere from $500 to $4,000, and a home mechanical ventilator (HMV) can cost between $8,000 and $15,000, coverage under CMS durable medical equipment (DME) guidelines can provide essential financial help for patients enrolled in these programs.

CPAP and BPAP devices often cannot supply the amount of volume that patients with COPD need. Plus, they lack portability, so patients cannot use them outside the home like they can with battery-operated noninvasive ventilation devices.

However, the prior guidelines sometimes made it easier to provide an expensive HMV for patients with COPD when a much less expensive BPAP-type device would have been sufficient. This greatly increased the cost of providing respiratory support to patients with COPD living at home. Furthermore, guidelines set by CMS often impact qualification criteria set by private insurers in determining—or denying—coverage for their clients.

In short, how CMS defines and determines the need for ventilation systems can affect how, for how long, and at what cost millions of Americans can breathe.

THREE KEY POINTS

Beginning in 2020, CHEST and allied respiratory health organizations convened panels of technical experts to recommend federal guidelines for noninvasive ventilation devices as they applied to distinct respiratory issues beyond COPD, including restrictive airway disorders, sleep apnea, and hypoventilation. These reports were submitted to CMS, which announced in late 2024 that it was creating a new document and accepting comments for revisions—but the document and revisions were to be only in relation to ventilation systems and COPD.

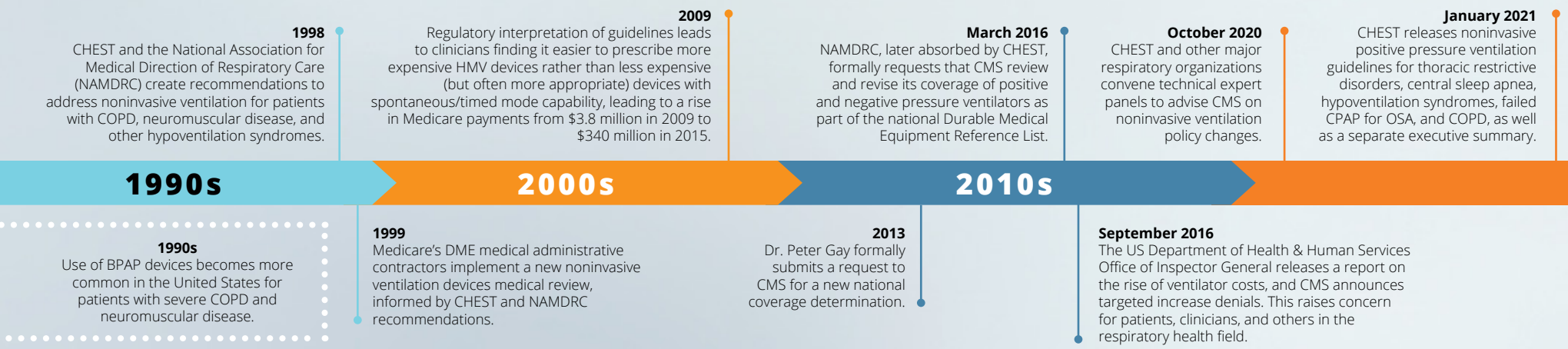
CHEST responded with a letter referring to the expert panel recommendations and outlining three key requests:

- Drop overnight oximetry saturation test requirements, which were proven to contain racial bias and had no proven medical basis.
- Focus on a comprehensive policy ensuring patient access to the correct device in a timely manner, which includes dropping a requirement to trial certain devices that a patient's clinician knows are inadequate or not the correct match.
- Create a comprehensive and cohesive policy that is not interpreted differently by different entities—in particular, ensuring that the DME Medicare Administrative Contractors guidelines align with federal practices and language for respiratory assistance devices and HMVs.

In March 2025, CMS released the latest version of the document, giving organizations one month to submit comments. Dr. Gay said the preliminary draft indicates CMS has accepted the first point.

"It was absurd to begin with," he said. "The justification for it didn't exist in any research report, and they finally acknowledged that."

Dr. Gay said that on the second and third points, the draft indicates that the government has understood some of the differences in noninvasive



ventilation systems and how they apply to different patient needs. He has concerns about some of the wording, he said, including what he believes is a needless requirement for clinicians to reassess ventilation prescriptions every six months. However, he remains cautiously optimistic going into the final round of submissions, he said.

Dr. Gay said he sees hope for coverage of HMVs in particular—the more expensive devices that are necessary for some patients but which ballooned Medicare expenditures due to questionable regulatory interpretation in the 2010s (see timeline below).

"We honestly thought that they would virtually block access to a home mechanical ventilator," Dr. Gay said. "But, if anything, it will probably get easier to the extent that, now, it is clarified, and instead of people just being frightened of it and staying away from it, it's now pretty clear that they expect you to have some need of that."

A LIVING DOCUMENT

The regulations for HMVs are a good example of how the impact of the document will be more than its final wording, Dr. Gay said.

"It will depend on how it is going to play out in the next couple of years, how DMEs respond, and what CMS sees as abuse down the road and then goes after it with additional language," he said. "It's always an evolving process." He added that the language must be flexible enough to accommodate evolving technology but precise enough to be grounded in proven research and for the benefit of patients.

As experts advocate for the best possible version of CMS guidelines, the respiratory health community should be prepared to view the final directive much as they might any piece of legislation—as a living document that will be open to interpretation and, thus, monitoring, Dr. Hill said.

While the previous document lacked flexibility, it did provide concise wording, he said, and he has concerns that this document could go in the other direction if it isn't "sharpened up." Even so, he thinks the results will represent significant progress.

"I do think," Dr. Hill said, "that this will probably make it easier to get the right device to the right patient." ●

All references are available online at chestphysician.org.

2020s

September 2021
CHEST resubmits its request letter, along with a 74-page policy study, jointly submitted with the American Academy of Sleep Medicine, the American Association for Respiratory Care, and the American Thoracic Society.

October 2024
CHEST responds to the request with a letter outlining three key goals for CMS to consider in its NCA.

April 2025
CHEST shares public comments in response to the proposed decision memo. The comments cover five specific criteria that CHEST believes are critical to ensuring patient access and optimizing outcomes.

September 2024
CMS accepts the request and begins a one-month public comment period to initiate a national coverage analysis (NCA) for "Noninvasive Positive Pressure Ventilation (NIPPV) in the Home for the Treatment of Chronic Respiratory Failure consequent to COPD."

March 2025
CMS releases its proposed decision memo and announces it will accept public comments for one month.

June 2025
CMS target date for NCA completion.

OSA & Alzheimer's

// continued from page 6

patients randomized to a three-month wait-list, with memory performance approximating that in subjects without OSA. Increases in N3 sleep from the baseline night predicted the increase in overnight word-pair memory improvement between the baseline and follow-up session. These findings suggest that PAP therapy not only improves cognitive deficits associated with OSA but also restores aspects of sleep architecture critical for cognitive processes. The study highlights the potential of PAP treatment to mitigate cognitive impairments and normalize sleep neurophysiology in individuals with OSA.

TAKE-HOME MESSAGES

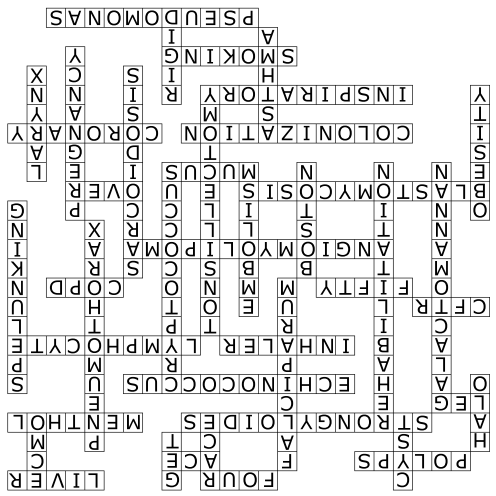
Given the prevalence of OSA and the long preclinical phase of AD, early identification and treatment of sleep apnea represent important opportunities for intervention. Sleep clinicians and pulmonologists are uniquely positioned to screen for OSA in at-risk populations and emphasize the potential downstream cognitive benefits of adherence to therapy. Even if treatment does not halt the trajectory of AD pathology, its potential to improve quality of life, cognition, and functional independence should not be underestimated.

Looking ahead, ongoing research continues to explore how best to translate these findings into broader clinical practice. One such effort is the ESSENTIAL (The Effects of Successful OSA TreatmENT on Memory and AD BIomarkers in Older AduLts) clinical trial (NCT05988385), in which older individuals aged 55 years to 85 years with a new diagnosis of OSA are randomized to treatment with their choice of PAP, oral appliance therapy, and/or positional therapy vs a three-month wait-list. This study is testing the impact of AHI reduction, irrespective of treatment approach, on overnight memory and plasma AD biomarkers, and it will hopefully shed further light on this topic. As such investigations advance, OSA treatment may prove not only effective for improving sleep but also instrumental as an early, modifiable intervention to slow or mitigate cognitive decline. ●

All references are available online at chestphysician.org.

CHEST PUZZLER KEY

Answer key to crossword puzzle on page 15



CHEST to offer first-of-its-kind certification for APPs in critical care

BY MADELEINE BURRY

If you're a physician associate (PA) or nurse practitioner (NP) in critical care—or if you work with one—you're well acquainted with the valuable, essential work that advanced practice providers (APPs) perform in this setting. APPs bring a wide range of skills, from stabilizing patients to providing hands-on care in the ICU, often spending more time interacting with patients than physicians can, said Robb Rabito, MEd, Senior Director, Strategy, at CHEST.

Yet, despite the importance of their role, there has been no certification available for an APP's body of knowledge and experience in critical care—until now. Beginning in June, CHEST will open registration for a first-of-its-kind critical care certification for APPs.

It's "one exam that can validate both professions," said Allison Wynes, DNP, ACNP-BC, FCCP, at University of Iowa Health Care. And the certification also leads to benefits for the multidisciplinary teams working in critical care, as well as patients.

WHAT'S COVERED?

CHEST's Advanced Practice Provider Critical Care Exam is divided up into 11 domains:

1. Neurologic System
2. Cardiovascular System and Shock
3. Pulmonary System
4. Gastrointestinal System
5. Renal, Endocrine, and Metabolic Systems
6. Hematologic and Oncologic Disorders
7. Infectious Disease
8. Diagnostics and Procedures
9. Special Considerations: Surgical, Trauma, and Obstetrics
10. Pharmacology and Toxicology
11. Patient-Centered Care, Health Equity, and Ethics

For more details on each section, visit **chestnet.org/app-certification**.

To determine these 11 topics—as well as each one's percentage of the exam—CHEST used a rigorous and data-driven approach aligning with professional certification standards. It began with insight from the people who know the field best: APPs. A steering committee was assembled, made up of APPs with at least five years of experience across a variety of critical care environments, including surgical ICUs, pediatric ICUs, and others, said Leeah Sloan, MS, PA-C, Manager, Critical Care Advanced Practice Providers, at Henry Ford Health.

Committee members focused on foundational areas for practicing critical care that are meaningful across these different ICU environments. "The certification exam will be really applicable to the job you're doing every day and the care you're giving every day," Dr. Wynes noted. CHEST also underwent a job task analysis to examine all the tasks an APP might perform in a critical care setting.

> *[The certification covers] what every provider needs to know when they're working in critical care, whether you're a physician or an APP—it's what our patients need, [and] it's the care that we're providing day to day.*
>
> — ALLISON WYNES, DNP, ACNP-BC, FCCP

Allison Wynes, DNP, ACNP-BC, FCCP

Leeah Sloan, MS, PA-C

At each step, the team verified that the exam topic areas reflected what APPs encounter when providing critical care. For instance, a survey sent to hundreds of APPs allowed practitioners from around the country to weigh in on the specifications and specific elements APPs would need knowledge of in the exam. From there, the group developed a blueprint for the scope of work for APPs in critical care medicine, Rabito said.

One last step: With the topics set, CHEST confirmed that the exam mirrored the critical care physician board certification closely. "[The certification covers] what every provider needs to know when they're working in critical care, whether you're a physician or an APP—it's what our patients need, [and] it's the care that we're providing day to day," Dr. Wynes said.

WHY IT MATTERS

If you're not part of a team operating in the critical care environment, you might wonder: What makes this certification important and necessary?

One reason, Sloan noted, is the gap in education from when an APP graduates a program to when they practice in an ICU. "Our training programs, both acute care nurse practitioner and physician associate programs, really don't adequately prepare you for the level of care that you're expected to provide," Sloan said. Training can be focused on what you'll need to know as a generalist, which means that for APPs in critical care, a lot of education happens on the job, Sloan pointed out.

That can lead to an uneven playing field. Some APPs might wind up with a helpful physician mentor or find time to perform the research needed to gain a high level of performance; others might not. "We wanted to bridge that gap in education [with this certification]," Sloan said. As APPs prep for the exam, they can identify areas where they need more knowledge and study further, Dr. Wynes said.

Taking the extra step to earn the certification legitimizes an APP's practice and ability to work in critical care. "It's a signifier that says, 'Yes, I know what I'm doing. Yes, I belong here. Yes, I can take good care of these patients,'" she said. "It's not just a check-the-box certification."

That legitimization is meaningful to APPs—not to mention fosters collaboration with physicians and trust from patients, Sloan said. Plus, the certification helps patients know that "qualified providers [are] caring for you at your sickest," she added.

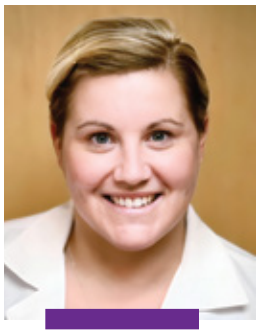
Certification might also provide APPs with an edge when job hunting, providing physician groups and hospital organizations with a quick view into a practitioner's competence, Sloan said.

VALUE FROM CHEST

There are some critical care fellowship programs for APPs scattered throughout the United States. But there's no standard certification, and it's meaningful that this certification is offered by CHEST. A physician may not be familiar with organizations geared toward NPs or PAs (and a PA may not know NP-focused accrediting agencies, and vice versa). But health care providers in the critical care space know CHEST well.

// continued on page 14

Column



Bronchoscopy: An emerging role for advanced practice providers

BY REBECCA PRIEBE, MSN, ACNP-BC, FCCP

Advanced practice providers (APPs) play an increasingly vital role in the health care system, particularly in areas where physician shortages exist. As health care systems continue to adopt a team-based care approach, APPs have become essential members of many subspecialty pulmonary teams, contributing significantly to both inpatient and outpatient procedural services.

APPs can be trained to perform a range of pulmonary procedures, either independently or under physician supervision depending on state laws and institutional policies. These procedures include thoracic ultrasound, thoracentesis, chest tube placement, indwelling pleural catheter placement or removal, and, more recently, basic bronchoscopy.

Bronchoscopy is a procedure commonly performed by pulmonologists, critical care intensivists, otolaryngologists, anesthesiologists, and cardiothoracic surgical specialists. There are well-established curricula from the Accreditation Council for Graduate Medical Education that provide clear guidelines and competency assessments for physicians learning bronchoscopy. However, there is currently no formalized training pathway for APPs learning bronchoscopy.

For physicians, bronchoscopy training occurs during fellowship programs, when dedicated time is allocated to mastering the procedure through a combination of simulation training, didactic lectures, required readings, and supervised, hands-on practice. In contrast, APP educational programs typically do not include procedural training, leaving many APPs to acquire these skills through on-the-job mentorship. However, in recent years, nationally accredited critical care and APP residency and fellowship programs have begun incorporating procedural training, including bronchoscopy.

Ensuring uniformity in procedure performance may be seen to be more vital for APPs compared with physicians because their training backgrounds and experience levels may have more variability. Bronchoscopy curriculum for APPs should include focused education on normal airway anatomy, flexible bronchoscope features, procedure indications, contraindications, and potential complications. Procedure training simulation should be the first step in developing bronchoscope technique and a consistent airway examination. Once proficient, mentorship with a physician should consist of procedure repetition over a block of time until mastery skills are obtained. During this period, anatomical variances and abnormalities can be identified and explored. A stepwise evaluation tool should be used to assess an APP, particularly if more than one mentor exists, to assure safety and competency and to identify if remediation is required.

Critical care and interventional pulmonary APPs are a growing subset of providers for whom bronchoscopy is becoming an increasingly common skill. Although no direct data exist comparing the bronchoscopy skills of APPs with those of physicians, studies show that APPs can perform other critical care procedures safely and effectively, with similar outcomes to physicians when given appropriate training. Over time, procedural competency is maintained by those who perform procedures most frequently, underscoring the importance of experience rather than solely the provider's title. Investing in training APPs to perform bronchoscopy offers long-term economic and operational benefits. Not only can it enhance APP job satisfaction and retention, but it can also expedite procedural access for patients and allow physicians to focus on other pressing clinical needs.

My personal journey with bronchoscopy began one year ago. As an acute care nurse practitioner specializing in interventional pulmonology for the past seven years, I sought to expand my procedural skill set. With the unwavering support of my five attending physicians and formal institutional privileges, I initiated my training using the already established framework from our pulmonary and critical care fellowship program. I completed the required educational components, including a comprehensive reading list and 50 simulated airway examinations. Following this, I participated in weekly operating room procedures, performing intubations and airway exams under general anesthesia alongside an attending physician. After approximately two months with this consistency, I was deemed proficient and safe to perform these procedures outside the operating room setting. My skills have since expanded to include vented ICU patients requiring bronchoscopy for a variety of diagnoses, including hemoptysis localization, tracheostomy placement or exchange within an airway stent, airway stent assessments, bronchoalveolar lavage acquisition, and more.

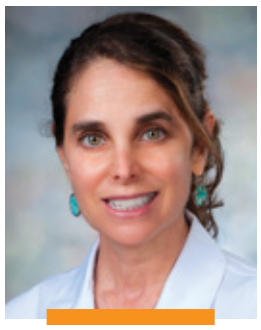
The symbiotic relationship between APPs and physicians strengthens the multidisciplinary approach to pulmonary care, ensuring comprehensive treatment for patients with complex respiratory conditions. Dedicated mentorship, formal education, and protected practice time will help APPs develop expert procedural skills, which include bronchoscopy. As the health care landscape continues to evolve, APPs will remain instrumental in not only delivering high-quality, patient-centered care but also contributing to the education and training of fellows and residents, particularly in essential procedural skills. ●

All references are available online at chestphysician.org.

Newest Bridging Specialties program focuses on team-based care in PH-ILD

BY BETSY PILAND

Early recognition and diagnosis are critical for patients with pulmonary hypertension associated with interstitial lung disease (PH-ILD)—a condition that can too easily slip through the cracks of siloed medical specialties. To address persistent PH-ILD diagnosis gaps and reduce delays in treatment, CHEST launched the newest addition to its Bridging Specialties® series: Timely Diagnosis for PH-ILD.



Deborah Jo Levine, MD, FCCP

Navneet Singh, MD, ScM

This educational initiative, launched in January 2025 with a live expert webinar, is designed to empower pulmonologists, primary care physicians (PCPs), and advanced practice providers with tools that improve the diagnosis and effective treatment of PH-ILD. It builds on the success of prior Bridging Specialties programs that have focused on ILD and COPD.

"The Bridging Specialties program is vital because medicine is often practiced in silos," said Deborah Jo Levine, MD, FCCP, Professor of Medicine at Stanford University and a member of the Steering Committee. "Conditions like PH-ILD may be recognized by a variety of specialists, but it's not always clear who should guide the next steps. This initiative encourages collaboration across disciplines and helps us better understand how different clinicians might approach the same case."

ADDRESSING DIAGNOSIS GAPS

PH-ILD is a complex condition that intertwines the two diseases, each of which has its own diagnostic pathways. Delays in diagnosis are common, often stemming from limited awareness, overlapping clinical features, and restricted access to specialized care.

"Whether it's a practitioner specializing in PH or ILD, a general pulmonologist, or a primary care provider, it is important for us all to recognize presentations and symptoms of PH-ILD," Dr. Levine said. "The Bridging Specialties program encourages us to reflect and ask, 'What is my threshold for investigating further? What might I be missing?'"

This collaborative mindset is critical, according to Navneet Singh, MD, ScM, Assistant Professor of Medicine at Brown University and another member of the Steering Committee. "Patients may first present to a PCP or general pulmonologist who might not immediately recognize the signs," he explained. "This program helps clinicians make that crucial connection earlier and refer patients for appropriate evaluation."

NEW RESOURCES FOR CLINICIANS

The Timely Diagnosis for PH-ILD program will offer a suite of educational tools aimed at reducing diagnosis and treatment gaps. In addition to the currently available webinar recording featuring multidisciplinary experts (including Drs. Levine and Singh) discussing real-world case scenarios, a patient questionnaire, e-learning modules, clinical algorithms, and decision-making tools are all planned for release in the coming months. These assets are designed for practical use across care settings, especially where access to PH or ILD specialists may be limited.

> *The Bridging Specialties program is vital because medicine is often practiced in silos. Conditions like PH-ILD may be recognized by a variety of specialists, but it's not always clear who should guide the next steps. This initiative encourages collaboration across disciplines and helps us better understand how different clinicians might approach the same case.*
>
> — DEBORAH JO LEVINE, MD, FCCP

"It's a resource-intensive diagnosis," Dr. Singh said. "Not every clinician has access to specialized testing. These tools help bridge that gap, making it easier to identify PH-ILD and ensure patients receive a timely diagnosis and appropriate care."

VALUE OF EARLY DIAGNOSIS & COORDINATED TREATMENT

Delays in the diagnosis and treatment of PH-ILD can result in irreversible damage and a marked decline in quality of life. Early intervention is possible only when the condition is recognized early, making timely identification essential to improving outcomes.

"We know that patients with PH-ILD have higher morbidity and mortality compared with those with ILD alone," Dr. Levine said. "Time is of the essence. The earlier we identify this process, the more opportunity we have to intervene."

Additionally, effective PH-ILD care hinges on strong communication across disciplines. Dr. Singh emphasized the critical roles of each health care provider, starting with a PCPs and branching off into all specialties. Communication is key among the whole care team.

EXPANDING THE BRIDGING SPECIALTIES SERIES

The PH-ILD initiative is the third installment in the Bridging Specialties series, following earlier editions on ILD and COPD. Later this year, CHEST will expand the program to include a new offering on nontuberculous mycobacteria disease and bronchiectasis—both of which, like PH-ILD, are commonly misdiagnosed or diagnosed too late.

"As we collaborate and share insights, we can generate our ideas, and, ultimately, this communication will help our patients." Dr. Levine said. "This kind of cross-specialty collaboration may eventually lead to practice guidelines, new educational tools, and better outcomes." ●

Bridging Specialties: Timely Diagnosis for PH-ILD is supported by an educational grant from United Therapeutics.

An early look at the headlining topics

BY JOY VICTORY

As Chair of the CHEST 2025 Scientific Program Committee, Sandhya Khurana, MD, FCCP, knows she's a little biased. Still, even she's blown away by the breadth and scope of what has been accepted for this year's sessions.

"CHEST has always led the way in innovative education, and, this year, we're going to continue to push that envelope," said Dr. Khurana, who mentioned she's especially looking forward to sessions on asthma, pulmonary hypertension, lung cancer, and live learning—the latter of which will feature cadavers for the first time since 2019.

"There's going to be a lot of cool stuff, both educational and noneducational. It will be an experience that will keep you going until the next CHEST meeting," she said. "Don't miss out."

Let's take a brief look at the hot topics each educational niche has to offer.

LIVE LEARNING

No doubt, cadavers are the big draw for this year's live learning sessions. "It's one of the best ways for people to learn procedures," said Otis Rickman, DO, FCCP, Chair of the Live Learning Subcommittee.

While the logistics are challenging to pull off, courses with cadavers are always some of the highest-rated sessions, Dr. Rickman said. "There are very few organizations that can pull that off in a convention center," he said. "CHEST is one of them."

SLEEP MEDICINE

While most people know glucagon-like peptide-1 (GLP-1) agonists as diabetes and weight loss medications, they are also emerging as a new treatment for people with OSA, noted Chitra Lal, MD, FCCP, Chair of the Sleep Medicine Curriculum Group and the Sleep Medicine Network. Attendees can look forward to sessions that dig into the emerging science and practical uses of these medications.

"At this point, because everybody's asking about these drugs, our patients come in asking us to prescribe them," she said. "Our expert panelists will cover which patients might be suitable for GLP-1 agonists and when these should be considered."

CHEST INFECTIONS/DISASTER MEDICINE/SYSTEMIC DISEASE

The big issue this year is climate change, said Salim Surani, MD, MSc, FCCP, Chair of the Chest Infections/Disaster Medicine/Systemic Disease Curriculum Group and the Chest Infections and Disaster Response Network. "We just saw the wildfires in California. Before that, we had a fire in Hawai`i. It's a problem that's not going away." Yet not everyone agrees on what's causing it and what to do about it. "It's a very controversial topic," he said.

LUNG CANCER/INTERVENTIONAL PULMONARY/RADIOLOGY

Minimally invasive treatments for early-stage lung cancer, particularly bronchoscopic treatments, will be a highlight of the thoracic oncology and chest procedures sessions, said George Cheng, MD, FCCP, Chair of the Lung Cancer/Interventional Pulmonary/Radiology Curriculum Group and the Thoracic Oncology and Chest Procedures Network.

"It's an area of active research and a lot of debate about how we keep pushing the envelope. How do we stay on the forefront of this new exciting development?" he said.

AIRWAYS DISEASE

Evolving COPD guidelines and treatments—such as biologics—will be a major area of discussion in this year's Airways Disease Curriculum Group, led by Shahid Sheikh, MD, FCCP, who is also Chair of the Airways Disorders Network. Several important studies have come out on the topic, which is affecting the management of COPD in different age groups, he said.

INTERSTITIAL LUNG DISEASE/ TRANSPLANT

Said Chaaban, MD, FCCP, Chair of the Interstitial Lung Disease/Transplant Curriculum Group and the Diffuse Lung Disease and Lung Transplant Network, is excited that, this year, there will be a focus on occupational and environmental lung disease—including not just how to talk to patients about air quality but also how to talk about policy improvements that focus on air pollution. His group also expanded offerings on sarcoidosis compared with previous years and will offer several sessions on lung transplantation, including the use of extracorporeal membrane oxygenation as a bridge from the ICU to transplantation.

CRITICAL CARE

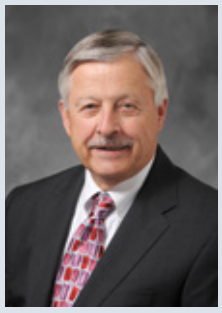
Because artificial intelligence is becoming more common in critical care medicine, it's an important topic of discussion at CHEST 2025, said Daniel Ouellette, MD, FCCP, Chair of the Critical Care Curriculum Group and the Critical Care Network. But it's far from the only pertinent topic. Other critical care sessions will cover sepsis, telemedicine disparities in the ICU, and ARDS.

"I'm particularly excited about a session that we're doing that looks at underlying physiology and new frontiers in the management of ARDS," he said. "And we're looking at personalized care in ARDS, at biomarkers, at the use of new medications, and at comorbidities that develop in ARDS—how they are linked because of the underlying pathophysiology."

CARDIOVASCULAR AND PULMONARY VASCULAR DISEASE

Oksana Shlobin, MD, FCCP, Chair of the Cardiovascular and Pulmonary Vascular Disease Curriculum Group and the Pulmonary Vascular and Cardiovascular Network, is looking forward to several sessions that address sotatercept, the first drug to target a novel nonvasodilator pathway in the treatment of pulmonary arterial hypertension, and discuss where it fits in the treatment algorithm of patients with this incurable and progressive disease.

The annual meeting, slated for October 19 to 22, in Chicago, is now open for registration. Reserve your spot by July 14 to save $100 with early bird pricing. ●



Paul A. Kvale, MD, Master FCCP

On April 24, 2025, the CHEST community lost a great physician and former leader, Past President Paul A. Kvale, MD, Master FCCP. He is survived by his wife of 65 years, Susan, children Valerie Long (John), Craig (fiancée Laura), and Heidi Tigges (Todd), nine grandchildren, and five great-grandchildren. In addition to serving as CHEST President from 2004 to 2005, Dr. Kvale served on the Guidelines Oversight, Ethics, Compensation, and Council of Networks Committees—among many others throughout his tenure at CHEST. We remember our colleague and extend our sincere condolences to his family and community. The following obituary was written by Dr. Kvale's colleague, Eric Scher, MD, Chair of the Department of Medicine and Chief Education Officer at Henry Ford Health.

Dr. Kvale will be remembered as a well-respected and valued teacher, clinician, and researcher in the field of pulmonary and critical care medicine.

Many of you will remember Dr. Kvale, who spent an extraordinary 50 years of service in the Department of Medicine, Division of Pulmonary & Critical Care Medicine at Henry Ford Health. The entirety of Dr. Kvale's distinguished career was spent at Henry Ford Hospital, beginning with internship, residency, and fellowship training, which included a three-year interruption to serve his country as Lieutenant Commander in the US Navy. After completing a one-year fellowship as a Respiratory Physiology Research Fellow at the Institute of Diseases of the Chest, Brompton Hospital, London, in 1973, Dr. Kvale returned to Henry Ford Hospital and began his career as a staff pulmonologist. Quickly exhibiting excellent leadership skills, Dr. Kvale was appointed Division Head of Pulmonary and Critical Care Medicine in 1977—a position he held for 11 years. After stepping down from the leadership role, Dr. Kvale continued to serve as Senior Staff Physician in the division until his retirement in 2015.

Throughout his 50-year tenure, Dr. Kvale contributed greatly to the mission of the department. His CV is impressive and highlights outstanding contributions. He was a respected leader, active clinician, and proceduralist, author/coauthor on a great number of publications, exemplary teacher/mentor for trainees and junior staff, and active researcher. Notably, he was lead investigator on the original Nocturnal Oxygen Therapy Trial, the Pulmonary Complications in AIDS study, and he was coordinator of the NIH Prostate, Lung, Colon, and Ovarian screening program, as well as the Principal Investigator for the National Cancer Institute's study on the efficacy of spiral CT scanning in the new recognition and diagnosis of lung cancer.

Dr. Kvale was active in the pulmonary community and served a term as President of the American College of Chest Physicians (2004-2005). All of these activities garnered Dr. Kvale repeated recognition for his academic, clinical, and research excellence. ●

Bronchiectasis // continued from page 5

PULMONARY REHAB AND PERSONALIZED CARE

While pharmaceutical innovations take center stage in the treatment of bronchiectasis, nonpharmacological interventions remain just as vital. Airway clearance remains a cornerstone in the treatment of bronchiectasis and should be considered in all patients with this condition. Pulmonary rehabilitation has proven to be an effective tool for improving time to exacerbation and enhancing patients' overall well-being. The emphasis on exercise, in particular, can help patients build strength and endurance, counteracting the deconditioning that often accompanies this chronic illness.

In line with personalized care, the multidisciplinary approach to bronchiectasis is gaining recognition. This approach involves pulmonologists, respiratory therapists, physiotherapists, and nutritionists collaborating to create a holistic treatment plan for each patient. This comprehensive strategy is designed to address not only the medical aspects of bronchiectasis but also the psychological and social factors that contribute to the burden of disease. Recently, the Bronchiectasis & NTM Association (www.bronchandntm.org) launched the Care Center Network, recognizing centers of excellence for bronchiectasis and NTM care across the United States.

A GLIMMER OF HOPE

With these new treatments and approaches, the therapeutic outlook for those who suffer from bronchiectasis is brighter than ever. The combination of personalized therapies, novel and repurposed medications, and a multidisciplinary approach is transforming bronchiectasis from a condition that once had few treatment options into one that offers hope for improved management and even disease stabilization.

As research continues to advance and more treatments emerge, there is cautious optimism that, one day, we may be able to offer a cure—or at least a significant reduction in disease severity—allowing people with bronchiectasis to lead fuller, healthier lives. For the time being, these new treatments represent a leap forward in an ongoing journey toward better care and outcomes for those affected by this challenging and often misunderstood disease. ●

All references are available online at chestphysician.org.

APP Exam // continued from page 10

"It's an organization that we can all interact with or be a part of and get education from all together," Dr. Wynes said.

The certification may also push physicians to "see the value of partnering with us, mentoring us, and collaborating with us to really provide the best care for our patients," Sloan said.

GETTING STARTED

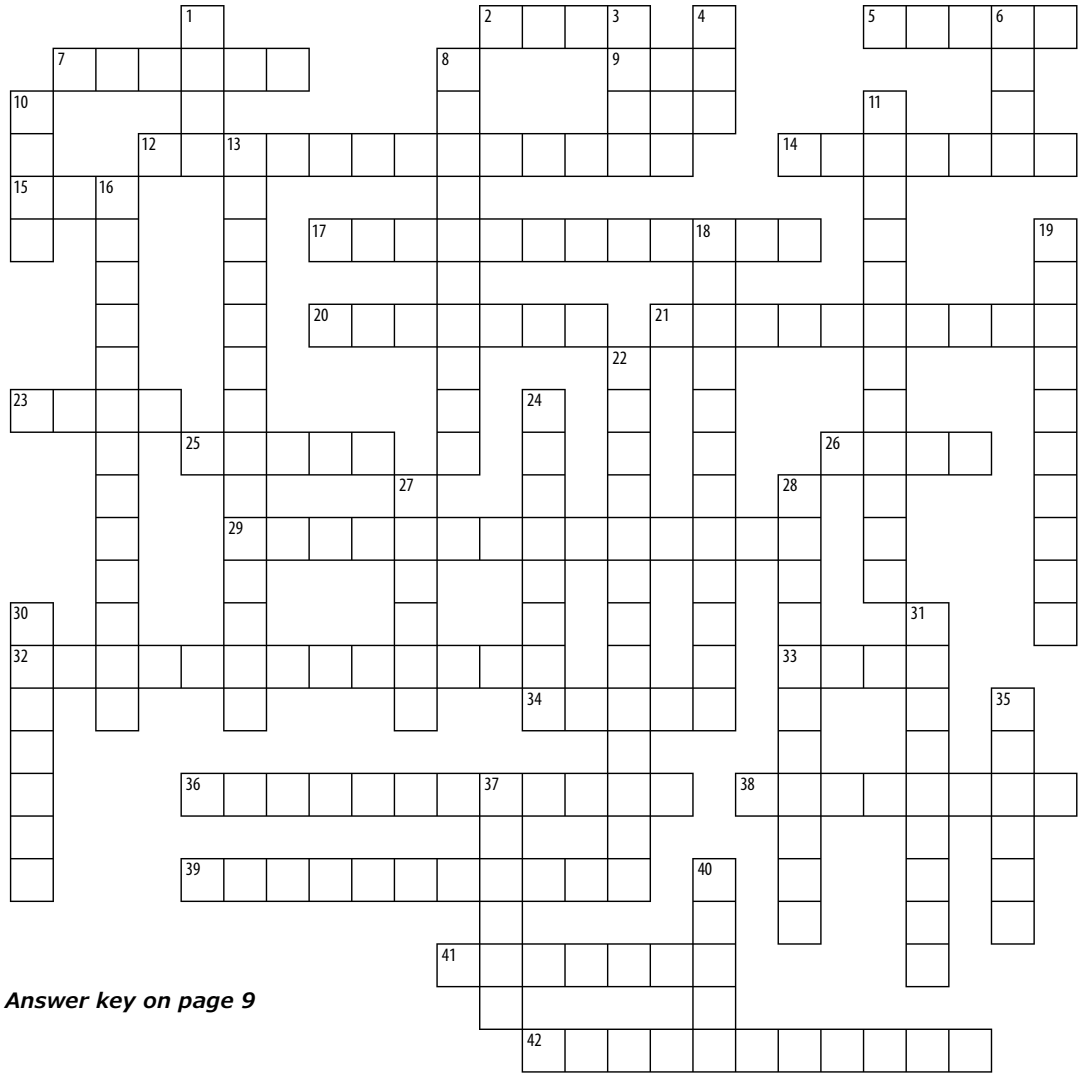
In June, registration will open for CHEST's competency-based exam, which will be administered starting in August.

Core education modules, with foundational lectures and test review questions, will be available to support APPs as they drill into the various topics covered on the exam, with more available in the future. For APPs who have been in the critical care setting for a year or less, this exam will be a valuable way to validate their knowledge and competence in the ICU, Rabito said.

Rather than standards of knowledge and competence being set by health care institutions, which can lead to variability, Rabito said, this certification "will ensure that patients are getting the best care possible in the ICU, and that's what is most important." ●

CHEST Puzzler

Test yourself with these clues from the January, February, and March 2025 issues of the journal *CHEST*® —compiled by William Kelly, MD, FCCP.



Answer key on page 9

ACROSS

2. Number of needle passes during EBUS-TBNA recommended for malignant disease and suggested for nonmalignant, per CHEST clinical practice guideline (Mar p.900)
5. Replacing enzyme (augmentation) in severe alpha-1-antitrypsin deficiency does not protect this organ, so genomic medicines are being studied (Feb p.446)
7. Dupilumab is a biologic to consider in a patient with severe asthma, elevated FeNO, low eosinophils, and nasal _____ (Feb p.337)
9. _____ levels are elevated in a majority of patients with sarcoidosis. It is produced in healthy lung and macrophages within granulomas. Patients treated with inhibitors of it, compared with angiotensin receptor blockers, had increased mortality in one database study. (Mar p.773)
12. Immunosuppression, especially steroids, can result in fatal hyperinfection. May not have eosinophilia. Ivermectin is treatment of choice. (Mar p.689)
14. Flavored cigarettes were banned 15 years ago, except for _____. See Neptune et al for a review of its politicization (Feb p.324)
15. A research letter suggests subtracting 10 mm HG from displayed MAP to correct for semi-recumbent position when you put the blood pressure cuff on the _____ instead of the arm (Feb p.493)
17. This parasite may cause a salty taste in mouth (vomica) and hydatid cysts in organs, which, when ruptured, may show a floating membrane on CT resembling a water lily (Mar p.691)
20. Asthma review, asthma management plan, and checking _____ technique during one consultation reduced child asthma exacerbations by 30% in a large UK study (Mar p.665)
21. Bronchoscopic alveolar lavage did not correlate with CT features in fibrotic ILD, but ground glass opacities were associated with not having a lot of this cell (Jan p.172)
23. _____ modulators have transformed treatment of patients with CF, beginning with ivacaftor in 2012 (Feb p.297)
25. Among donors for single lung transplant, the second lung is used less than _____ percent of the time (Feb p.312)
26. The PERFECT study, terminated early for safety concerns, studied inhaled treprostinil in this most common cause of Group 3 pulmonary hypertension (Jan p.16)
29. Lymphangioleiomyomatosis is a progressive, female-predominant, low-grade neoplasm with high serum VEGF-D levels and this benign renal tumor (Feb p.538)
32. An endemic mycosis infection that can range from asymptomatic pulmonary nodules to ARDS. Microscopically, it is a large, broad-based budding yeast (Feb p.381)
33. Pulse oximetry more frequently _____-estimates oxygen saturation in Black and Hispanic patients, impacting patient care (Mar p.832)
34. _____ plugs on CT are found in up to 67% of people with COPD, though 30% do not have symptoms and are associated with exacerbations and mortality (Jan p.34)
36. Pneumocystis is a life-threatening opportunistic infection, increasingly in people without HIV. But it can also cause _____, or "the establishment in host organism without causing apparent disease," though may still affect prognosis. (Jan p.55)
38. CHEST clinical practice guidelines value restrictive blood transfusion in adults, except those with acute _____ syndrome (Feb p.478)
39. We usually think of COPD in terms of FEV_1, but better forced _____ flow rates may mean less severe exacerbations and slower decline, especially with specific inhaler devices (Jan p.77)
41. _____ cessation in pulmonary langerhans histiocytosis can lead to disease stabilization and regression (Feb p.540)
42. 40% of adults admitted with pneumonia get broad-spectrum coverage for MRSA or this gram-negative organism, though these pathogens are recovered only 3% of the time (Jan p.25)

DOWN

1. A round parenchymal lucency, with a thin wall (2 mm or less), surrounded by normal lung (Feb p.530)
3. The Global Lung Function Initiative 2022 spirometry reference equations removed adjustment based on _____ for broader applicability and accuracy, and to reduce bias (Feb p.415)
4. A "_____ to know me" board is a simple poster filled out by patient, family, or friends in the ICU room to give clinical teams insight into a person's life before ICU admission (Feb p.315, 561)
6. The first page of the January edition lists 16 simulation courses available at CHEST headquarters, including one on the use of _____, which pumps blood out of body to add O2 and remove CO2 (Jan)
8. 1-855-5AMIVAS is a number to call for sodium artesunate to treat malaria, and this species is usually the most severe (Mar p.688)
10. A solid pulmonary nodule with surrounding ground glass opacity, known as the "_____ sign," is suggestive of invasive aspergillosis (Feb p.380)
11. Most frequent complication in patients receiving endobronchial valves for lung volume reduction (Feb p.307)
13. Exercise testing shows more improvement with pulmonary _____ program than with bronchodilator therapy (Jan p.98)
16. In immunocompromised patients, detecting _____ suggests fungal growth (infection) and not colonization. As a dairy product stabilizer, aspiration could lead to false positive BAL results. (Feb p.380)
18. _____ is found in decaying wood and bird excreta, its polysaccharide capsule is its primary virulence factor, and infected immunocompromised patients should get a lumbar puncture regardless of symptoms (Feb p.379)
19. Activities that increase risk of fungal infections include gardening, construction, farming, cannabis inhalation, and this word for cave exploration (Feb p.381)
22. Treatment of choice for the primary driver of OSA in children (Mar p.654)
24. Up to half of patients have dyspnea/exertional shortness of breath more than three months after acute pulmonary _____ (Feb p.586)
27. CHEST 2024 was in this city
28. Idiopathic disease of granuloma formation, often self-limited, though emergency hospitalizations may have high mortality (Jan p.164)
30. Patients with _____ are at higher risk of extubation failure due to decreased thoracic compliance, reduced functional residual capacity, and more sleep apnea (Jan p.11)
31. CFTR modulators for cystic fibrosis may increase the chance of this and preserve lung function over those nine months (Feb p.298,348)
35. The sophisticated gateway to the lungs, separating the passage of air from solids (Jan p.189)
37. In 1892, William Osler described this common condition as a monomorphic disease with intermittent symptoms (Jan p.1)
40. CHEST clinical practice guidelines for management of central airway obstruction suggests use of _____ bronchoscopy as a conduit for ventilation, excellent suction, and passage of instruments (Jan p.288)

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