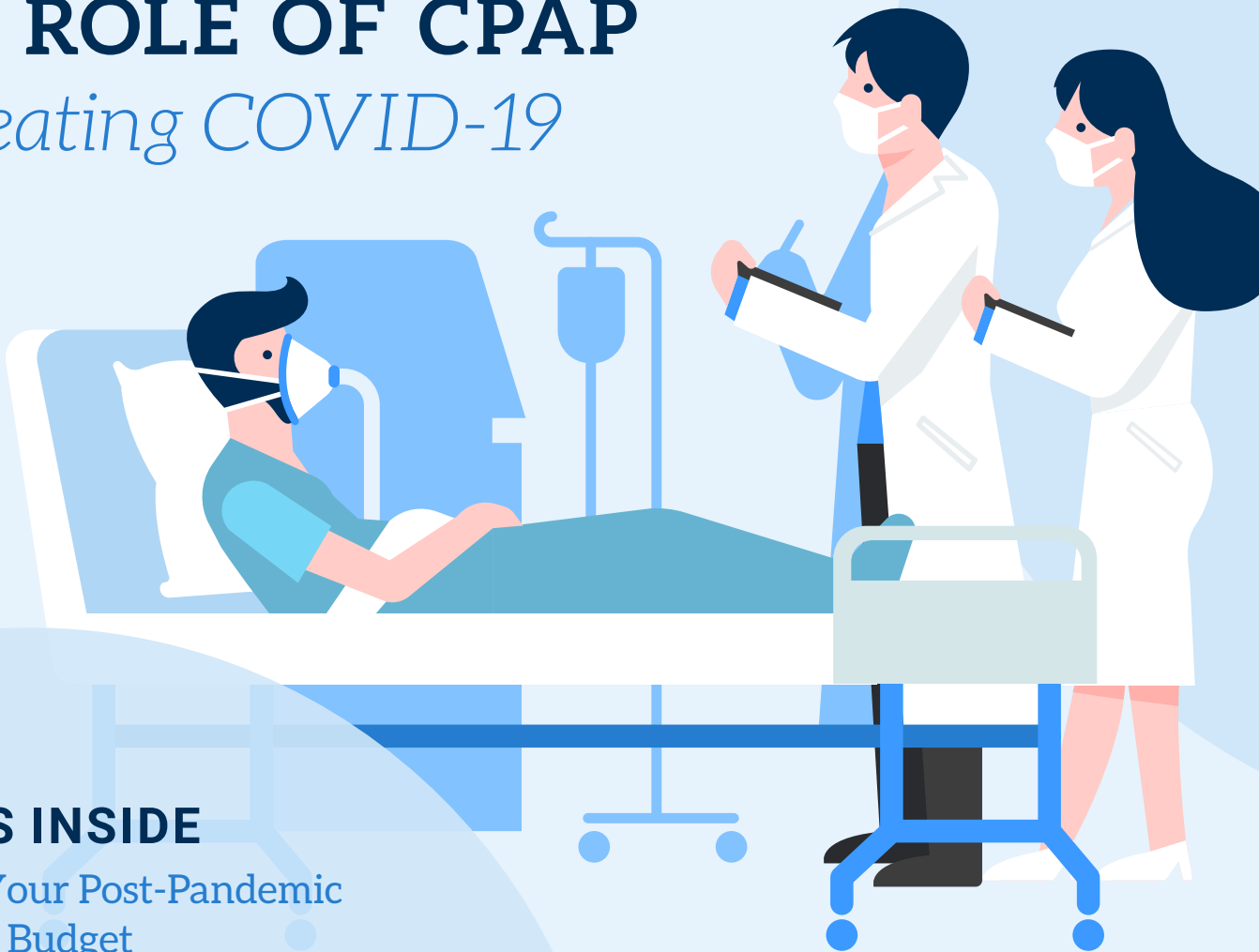


# AZ zZ 2

QUARTER TWO 2021 / VOLUME 30 / NUMBER 02

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## THE ROLE OF CPAP *in Treating COVID-19*



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Creating Your Post-Pandemic  
Operating Budget

MACs Increase Focus on  
Polysomnography Compliance

COVID-19 and School Start Times



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\* Reduction in sound power level 3.7 dBA compared with the standard N30i cushion

**1** ResMed AirFit N30i (redesigned cushion) user guide, Jan. 2021. **2** ResMed AirFit N30i (original cushion design) user guide, Feb. 2020. **3** ResMed external controlled take-home study of 236 evaluable current AirFit N30i mask users across the US from May 20 – June 3, 2020. 115 participants trialed and evaluated the redesigned AirFit N30i cushion while 121 participants trialed and evaluated the original cushion design at home for 2 weeks. Participants rated the criteria for AirFit N30i on a Likert Scale of 1-5.

@ 2021 ResMed. 10112427r1 2021-05

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From the Editor

# Say Goodbye to COVID-19!

By Rita Brooks, MEd, REEG/EPT, RPSGT, FAAST

The Centers for Disease Control and Prevention (CDC) recently announced that those who are fully vaccinated against COVID-19 can now unmask and return to some semblance of normalcy. For those of you not yet vaccinated, consider doing so for the protection of your family, friends, co-workers and especially for your patients. Let's get back to normal!

In this issue of *A<sub>2</sub>Zzz*, we focus on some of the things we have learned during the COVID-19 pandemic and suggest ways to move forward post-pandemic. Regina

Patrick reviews the role that continuous positive airway pressure (CPAP) played in treating respiratory distress in patients with COVID-19, and Laura Linley's Compliance Corner focuses on quarantine fatigue, which has affected many, including sleep technologists.

Getting back to business as usual will take some time. Kim Trotter provides an excellent breakdown of budgeting in a post-pandemic world and many of the new considerations that will affect managers budgeting for reopening and growth. An excellent review of Medicare Administrative Contractor (MAC) rules and the increased regulatory focus on polysomnography compliance is also included in this issue. This article by Marietta B. Bibbs points out important requirements for sleep centers billing Medicare and Medicaid and is a valuable resource. There is quite a bit of information on accreditation requirements included in the article as well.

An interview with Terra Ziporyn Snider, PhD, executive director

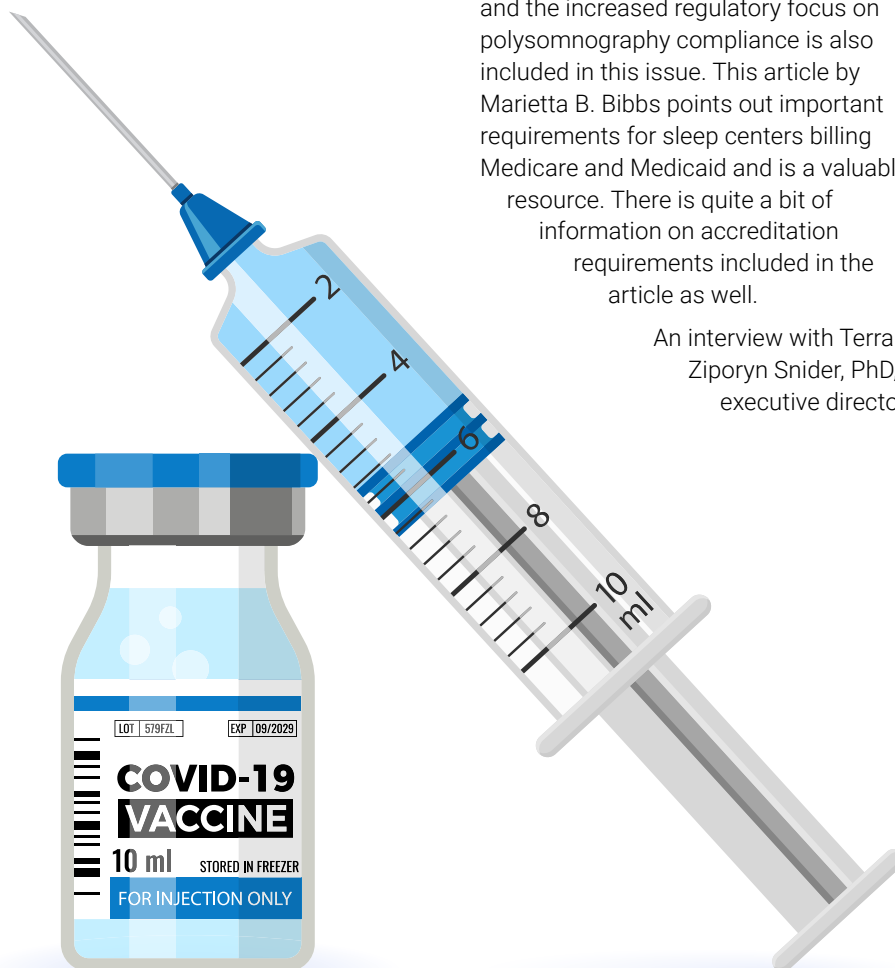
and co-founder of Start School Later Inc. provides an overview of how the pandemic affected school children – this being one of the few positive things related to the lockdown. School shutdowns provided an opportunity to confirm sleep research predictions about how teenagers would sleep if not constrained by school schedules with early start times. Start School Later received many comments from parents on the positive impact of their children being able to sleep later, even mitigating some of the mental health challenges related to the lockdown. Let's hope we can further the momentum and use the data gathered to continue to advocate for later school start times for our adolescents.

Finally, this issue of *A<sub>2</sub>Zzz* provides a roundup of COVID-19 resources that AAST has produced during this past year to support our members and the sleep community – from blogs and webinars to a comprehensive resource page. If you have not seen these valuable resources or participated in these events, you can still access them, and I recommend you review what is available to assist you as you move forward.

Although my spring here on the East Coast has been nearly as dismal as the pandemic, I see a bright future on the horizon as we begin our journey to a new normal. AAST continues to develop new educational programs and new and different venues for providing continuing education for sleep technologists. Check out the [Learning Center](#) on the AAST website.

Wishing you a summer of warmth, renewal and regeneration! Sleep well! 🌙

Rita





## President's Message

# AAST Is Here to Help

By Melinda Trimble, LRCP, RPSGT, RST, FAAST

It's hard to believe 2021 is already half over. We're well past the one-year mark of the start of the COVID-19 pandemic, and while cases are down in the U.S. and more and more people are getting vaccinated, we will continue to deal with the ramifications of the virus for years to come.

This issue of *A<sub>2</sub>Zzz* is largely focused on those ramifications — how they affect sleep-care professionals and our field. During this time, AAST continues to make it a priority to provide members and the sleep community with what they need to adapt and continue to provide superior care to patients and staff. Be sure to check out the AAST COVID-19 Resources Roundup on page 23.

In my last message, I outlined a few of the new initiatives AAST has launched this year, including a webinar series from the AAST Education Advisory Committee and new eBooks. I also wanted to remind you that AAST offers a number of complimentary digital publications, including "The Changing Face of Sleep Technology: Past, Present, and Future" and "Sleep and Athletics," among others.

Hear from AAST Board Member Brendan Duffy about why AAST's eBooks are so important by clicking on the video to the right.

You can always visit the [AAST Learning Center](#) for more information on all of AAST's educational initiatives.



Lastly, I wanted to touch on the importance of Medicare Administrative Contractors (MAC) compliance. It's extremely important to understand and follow the policy of your MAC, but it can also be very confusing. Check out page 17 for a full article on the topic, and feel free to reach out to AAST at [info@aaastweb.org](mailto:info@aaastweb.org) if you need help navigating it. 🌙

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AAST members who read *A<sub>2</sub>Zzz* and claim their credits online by the deadline can earn 2.00 AAST Continuing Education Credits (CECs) per issue, for up to 8.00 AAST CECs per year. AAST CECs are accepted by the Board of Registered Polysomnographic Technologists (BRPT) and the American Board of Sleep Medicine (ABSM).

To earn AAST CECs, carefully read the four designated CEC articles listed below and claim your credits online. You must go online to claim your credits by the deadline of **Sept. 30, 2021**. After the successful completion of this educational activity, your certificates will be available in the My CEC Portal acknowledging the credits earned.

## COST

The *A<sub>2</sub>Zzz* continuing education credit offering is an exclusive learning opportunity for AAST members only and is a free benefit of membership.

## STATEMENT OF APPROVAL

This activity has been planned and implemented by the AAST Board of Directors to meet the educational needs of sleep technologists. AAST CECs are accepted by the Board of Registered Polysomnographic Technologists (BRPT) and the American Board of Sleep Medicine (ABSM). Individuals should only claim credit for the articles that they actually read and evaluate for this educational activity.

## STATEMENT OF EDUCATIONAL PURPOSE & OVERALL EDUCATIONAL OBJECTIVES

*A<sub>2</sub>Zzz* provides current sleep-related information that is relevant to sleep technologists. The magazine also informs readers about recent and upcoming activities of AAST. CEC articles should benefit readers in their practice of sleep technology or in their management and administration of a sleep disorders center.

## READERS OF *A<sub>2</sub>ZZZ* SHOULD BE ABLE TO DO THE FOLLOWING:

- Analyze articles for information that improves their understanding of sleep, sleep disorders, sleep studies and treatment options
- Interpret this information to determine how it relates to the practice of sleep technology
- Decide how this information can improve the techniques and procedures that are used to evaluate sleep disorders patients and treatments
- Apply this knowledge in the practice of sleep technology

You must go online to claim your CECs by the deadline of **Sept. 30, 2021**.

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## READ AND EVALUATE THE FOLLOWING FOUR ARTICLES TO EARN 2.0 AAST CECS:

### The Role of CPAP in Treating Respiratory Distress in Patients With COVID-19

**Objective:** Readers will review and assess the effect of SARS-CoV-2 on the lungs, why CPAP was initially used for patients with the virus and the latest research in its use as a treatment for COVID-19.

### Creating Your Post-Pandemic Operating Budget

**Objective:** Readers will identify the difference between capital and operating budgets, as well as how COVID-19 might affect volume, revenue, and labor and non-labor expenses.

### Medicare Administrative Contractors (MACs) Increase Focus on Polysomnography Compliance

**Objective:** Readers will recognize differences in hospital-based sleep center utilization of MACs and policy requirements for sleep centers and review the current focus of MACs on validating sleep center services.

### COVID-19 and School Start Times

**Objective:** Readers will recognize the effect of the pandemic on the debate surrounding what time children should start school from the executive director and co-founder of Start School Later Inc.



# A Technologist's Guide to Performing Sleep Studies

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Designed as an introductory resource, the *Technologist's Guide to Performing Sleep Studies* provides step-by-step instructions for collecting sleep study data from patients. It includes sections that cover suggestions for putting the patient at ease, reviewing the patient's symptoms and medications, attaching the sensors, preparing to record, biological calibrations, artifact detection and correction, and documentation.

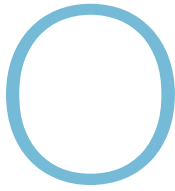


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# THE ROLE OF CPAP IN *Treating Respiratory Distress in Patients With COVID-19*



*By Regina Patrick, RPSGT, RST*



On Dec. 31, 2019, the Municipal Health Commission of Wuhan, China, reported a cluster of cases of severe pneumonia of unknown

etiology.<sup>1</sup> On Jan. 12, China publicly shared the genetic sequence of the virus that caused the novel pneumonia.<sup>1</sup> On Feb. 11, 2020, the World Health Organization announced the official name for the disease: coronavirus disease 2019, commonly shortened to COVID-19.<sup>2</sup> Shortly thereafter, the International Committee on Taxonomy of Viruses officially named the virus causing COVID-19 as severe acute respiratory syndrome coronavirus (abbreviated SARS-CoV-2).<sup>3</sup>

COVID-19 quickly became a global pandemic. Many patients with COVID-19 developed pneumonia and required ventilators to assist their breathing. The need for ventilators soon overwhelmed the supply of ventilators. With the shortage of ventilators caused by the COVID-19 pandemic, early reports that continuous positive airway pressure (CPAP) therapy prevented or delayed some patients with COVID-19 from progressing to needing a ventilator and reduced chances of death were encouraging.<sup>4,5</sup> This news created an interest in developing CPAP devices that could provide noninvasive ventilation<sup>6</sup> or using less familiar forms of CPAP such as helmet CPAP and the Boussignac CPAP to counter the ventilator crisis. At the year anniversary of the pandemic, scientists are now aware that CPAP treatment may not be appropriate for all patients with COVID-19.

SARS-CoV-2 belongs to the Coronaviridae family, which consists of enveloped viruses that use ribonucleic acid (RNA) as its genetic material. A viral envelope consists of a lipid bilayer that closely surrounds a capsid (i.e., a shell of proteins that surrounds the viral RNA strand). The SARS-CoV-2 virus' envelope contains large club- or petal-shaped projections, commonly called "spikes" (the scientific name is peplomer [pronounced "PEH-ploh-mer"]), which appears as a crown (i.e., corona from the Latin for "crown") under a microscope.

When SARS-CoV-2 infects a cell, the virus' spike protein interacts with surface

receptors for angiotensin-converting enzyme 2 (ACE2) on the host cell's surface. Through this interaction, the virus enters the host cell. The host cell replicates the virus and is destroyed in the process. In the process of cellular death, the host cell releases various chemicals, as well as new virus particles. Nearby macrophages detect these chemicals and respond by producing proinflammatory cytokines (i.e., proteins that mediate

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## *Some researchers suggest that certain COVID-19 patients may benefit from the combination of helmet CPAP at a moderate pressure level and prone position.*

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intercellular activity such as the immune response; some examples of cytokines are interleukin 1, interleukin 6 and tumor necrosis factor alpha). These proteins attract other immune cells (e.g., monocytes, macrophages and T cells) to the site of infection, which further promotes inflammation and establishes a proinflammatory feedback loop (a process called "cytokine storm").

If a person's immune response is impaired, these immune cells may accumulate in the lungs and overproduce proinflammatory cytokines, which ultimately damages lung tissues. In a person with a healthy immune response, the initial inflammation attracts virus-specific T cells to the site of infection, where they eliminate SARS-CoV-2-infected cells before the virus can spread. Antibodies against the virus are produced, and the virus is neutralized. In the lungs, alveolar macrophages recognize neutralized viruses and dead host cells and clear them by phagocytosis.

SARS-CoV-2 infection in the lungs results in widespread alveolar damage and thickening of the alveolar wall.<sup>7,8</sup> The inflammatory chemicals increase capillary permeability so that blood plasma easily leaks out of capillaries and enters the interstitial spaces of the alveolar cells, which allows fluid to accumulate outside of the alveoli. These events ultimately cause alveolar collapse and impair gas exchange across the membrane of the alveoli.

In people with moderate or severe COVID-19, a ventilator is used to improve gas exchange in the lungs. A ventilator delivers air through an endotracheal tube or tracheostomy, both of which involve sedation of a patient to apply. Some drawbacks of ventilator use are ventilator-induced damage to pulmonary tissues that may already be weakened by a disease process, pneumothorax (i.e., collapsed lung) and ventilator-associated pneumonia caused by bacteria that has entered the body and lungs through the breathing tube or tracheotomy.

Unlike a ventilator, CPAP does not involve invasive procedures (i.e., endotracheal tube insertion, tracheotomy) to deliver pressurized air, and it does not involve sedation to apply. CPAP treatment continuously delivers slightly pressurized air through a mask that fits over the nose or nose and mouth. In CPAP, the pressure is the same for inspiration and expiration.

CPAP treatment is usually used to prevent upper airway collapse in people with obstructive sleep apnea. However, in people with pneumonia, the CPAP may prevent or reduce alveolar collapse, thereby improving ventilation in the lungs.<sup>9</sup> CPAP treatment may also improve ventilation by changing the ventilation and blood perfusion dynamics in the lungs.

On March 22, 2020, the U.S. Food and Drug Administration released guidelines permitting manufacturers and health care professionals to use CPAP machines to treat respiratory insufficiency,<sup>10,11</sup> owing to the difficulty in obtaining ventilators. Two methods that have

gained scientists' interest as a treatment for COVID-19 are the helmet CPAP and Boussignac CPAP. In 2016, a team of American researchers<sup>12</sup> demonstrated that helmet CPAP decreased the need for intubation and intensive care unit length of stay in patients with mild to moderate adult respiratory distress syndrome (ARDS), compared to mask CPAP. In another study, Armirfarzan et al.<sup>13</sup> demonstrated that approximately 30-50% of their patients treated with helmet CPAP were successfully managed without requiring intubation and mechanical ventilation. Therefore, Armirfarzan proposed that helmet CPAP could potentially prevent the need for or delay the need for more invasive ventilation.

In helmet CPAP, a transparent, bell-shaped helmet covers a person's entire head. The helmet has a collar neck seal at the bottom to prevent air leakage. Air and oxygen are delivered through ports by a tube connected to a wall flow meter, a high-flow oxygen delivery device or a ventilator. The helmet reduces the aerosolization of the virus because it covers the whole head. This factor reduces the risk of transmission of the virus to health care workers. Compared to a nasal or orofacial mask, a helmet mask does not become misplaced, thereby creating leakage, when a patient lies on the side or prone. Therefore, the helmet mask is more comfortable to patients.

In addition, some research indicates that the prone position combined with helmet CPAP may improve aeration in the lungs.<sup>14</sup> CPAP (especially at a high pressure) may divert blood flow from high-perfused areas

to low-perfused areas, thereby allowing the redistribution of aerated and nonaerated lung areas.<sup>14</sup>

In 1976, use of the prone position as a treatment to improve ventilation in patients with ARDS was first described.<sup>15</sup> The prone position modifies respiratory mechanics in that the front of the chest wall cannot expand because it is in contact with the surface of the bed. By decreasing movement of the front chest wall in the prone position, aeration in the lungs shifts from the front region to the back region where the alveoli may have become deflated or filled with alveolar fluid.

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## *This combined treatment avoids overdistension of the healthy lung areas, which would slow the progression of the disease.*

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Based on these findings, some researchers<sup>14</sup> suggest that certain COVID-19 patients may benefit from the combination of helmet CPAP at a moderate pressure level (i.e., 10 cmH<sub>2</sub>O) and prone position. This combined treatment avoids overdistension of the healthy lung areas, which would slow the progression of the disease.

The Boussignac CPAP system (Vygon, Écouen, France) consists of a full-face mask connected to the Boussignac valve, a short circular chamber that extends from the front of the mask. The circular chamber contains two lateral ports; the upper port is connected to tubing that is connected to an air or oxygen source. The chamber can also be attached to filters (e.g., high efficiency particulate air [HEPA] filter) that can help reduce (but not eliminate) SARS-CoV-2 exposure.

In the Boussignac valve, gas (i.e., air, oxygen, or air/oxygen mix) passes from the source through the tubing and enters the upper port of the circular chamber. The gas then passes through microchannels, which direct the gas toward the center of the chamber where the gas molecules collide with each other at a high speed. This collision creates turbulence and pressure within the chamber, thereby creating a virtual "valve." A patient breathes against the pressure produced by the virtual valve. The Boussignac CPAP system is capable of delivering a moderate level (10 cmH<sub>2</sub>O) of CPAP and requires only an oxygen source.

Few studies have been conducted on Boussignac and COVID-19 outcomes. Some findings are encouraging, although more research is needed. For example, in a recent case report of a woman with hypoxemia due to COVID-19, Mwenge and Rodenstein<sup>16</sup> noted that the patient's oxygen levels increased to >90% when she was on the Boussignac CPAP. However, the patient found it uncomfortable. The physicians switched her to conventional CPAP, which she well tolerated without any complications. Based on this experience, they encourage the use of CPAP in patients with COVID-19 pneumonia.

Wong and colleagues<sup>17</sup> reviewed the efficacy of Boussignac CPAP treatment for acute respiratory failure. Their review indicated that Boussignac CPAP significantly improved respiratory parameters and oxygenation values, and that the Boussignac CPAP was more effective than standard oxygen delivery and just as effective as bilevel positive airway pressure treatment (a treatment in which positive airway pressure is higher on inspiration and lower on exhalation) in improving patient oxygenation and respiration. They further found, based on one of the reviewed studies, that Boussignac CPAP reduced the intubation rate and hospital stay. However, these findings were based on the results of pre-COVID-19 pandemic studies.





Another study<sup>18</sup> indicated that a Boussignac CPAP may be adequate for patients breathing at a normal breathing rate with low air flow, but with high air flow, it does not maintain stable airway pressure, which could increase the work of breathing and cause respiratory fatigue. Thus, the Boussignac CPAP system may be less suitable for patients who are breathing at a higher frequency.

In the early days of the pandemic, the use of CPAP in COVID-19 patients with respiratory symptoms may have contributed to the spread of COVID-19 in Life Care Center of Kirkland (Kirkland, Washington) – CPAP treatment had been applied before the residents had been confirmed as having SARS-CoV-2 infection.<sup>19</sup> Therefore, greater information is critical to determine how best to use CPAP for people with COVID-19 (e.g., with or without the prone position), how to avoid aerosolizing the virus<sup>10</sup> in health care settings and which patients would benefit most from the treatment. For now, scientists continue gathering information regarding the impact of CPAP treatment on COVID-19 disease in patients with respiratory distress. 🌙

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# Greater information is critical to determine how best to use CPAP for people with COVID-19.

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# Creating Your Post-Pandemic Operating Budget

By Kimberly Trotter, MA, RPSGT, FAAST

For some of us, it is the season of building budgets for the next fiscal year, depending on when your fiscal year begins. Whether you are new to the role of creating a budget or an old hat, I hope this primer will be helpful.

## Capital Budgets

Capital budget requests are usually made prior to creating your operating budget, and they consist of items you will need to purchase only once every few years, such as monitoring equipment, computers, a video system, etc. Capital items usually have a cap amount, such as items over \$5,000. Anything costing less than that would usually be considered an operating budget request. If you miss the cutoff deadline to submit these, or if equipment breaks mid-year, then some departments have contingency funds available to use for these purposes; or, your biomed department – if you are located within a hospital system – may pay for these repairs or replacements.

## Operating Budgets

Operating budgets are the month-to-month budget used to run the sleep laboratory. They consist of volume, revenue, and labor and non-labor costs.

### Volume

Within the operating budget, you must estimate what your volumes are going to be for the next fiscal year. I always recommend being conservative with this number and take into consideration sick days, vacations and holidays.

Many of us have experienced a severe decline in volume because of the pandemic, so it may be difficult to determine when the volumes will return to pre-COVID-19 levels. You can look at historical data from previous years, and review percentage changes from year to year to help you estimate future volumes. Also consider how many beds, technologists and physicians you have. Review study referral patterns and sources. If you have a work queue that your staff uses to schedule referred patients for sleep studies, look at those patterns before and after COVID-19 to help make decisions on your operating volumes.

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*Many of us have experienced a severe decline in volume because of the pandemic, so it may be difficult to determine when the volumes will return to pre-COVID-19 levels.*

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### Revenue

Revenue can sometimes seem difficult to understand. Revenue is the amount of money you bill out. Reimbursement is what you actually get from the insurance and patient copay and/or deductible. Revenue represents the types of sleep studies you are doing and not necessarily the volume. Revenue from an in-lab polysomnography (PSG) study is going to be higher than revenue from a home sleep apnea test (HSAT) because they are priced differently. Once you determine what your volume is going to be, and the type of studies you expect to perform, then you can estimate the revenue. In many hospitals, finance calculates this based on past volume and won't ask managers to focus on this, but it is important to understand it.

### Labor

The labor budget includes expenses related to the pay rates and full-time equivalency (FTE), but don't forget the benefits (insurance, paid time off and other tangibles), which are usually calculated as a percentage per FTE. How many staff members do you have? Are they all full time? If you add up all their percentages, what do you have for total FTE? Does that include vacation or nonproductive time? You will want to look at the volume you pledge to provide and work with the FTE you have to produce that volume. Are you able to hire more technologists? Sometimes asking for more FTE can be easier during budget time, especially if you can promise more volume. Looking back at pre-COVID-19 numbers can help you determine where you want to go from here.

### Non-Labor

Non-labor budget represents expenses related to supplies, sensors, electrodes and masks and will also include any rentals you may have, such as HSAT equipment

or positive airway pressure (PAP) devices. If you work in a hospital system, base budgets may be generated through hospital finance, which can give you a starting point. You can do some research and math to determine what your supply cost per sleep study is by dividing your total non-labor by the number of studies performed and annualize. Take into consideration possible inflation. You can contact your suppliers and ask if they foresee any increase in pricing. Some hospital finance departments add in a certain amount of inflation to your budget to make it easier.

Another aspect to look at is whether your non-labor budget is fixed or variable. Fixed means that your expenses are expected to remain the same, regardless of volume. Variable, or flexed, means you will spend more with increased volume. Most non-labor expenses would be considered variable, with the possible exception of rentals. You pay rent whether you use it or not. Regardless, you want to review your base budget to make sure it reflects what you expect to do in volume.

Another word about non-labor budget: It is important to pay attention to your spending patterns throughout the year. Many base budgets are created for you based on the spending of the first half of the fiscal year, then annualized. If you underspend during the first half of the year, you will likely wind up with a reduced base budget for the following year.

Overall, if you do your research and use resources available to you, creating a post-COVID-19 budget should be achievable. 🌙



**KIMBERLY TROTTER, MA, RPSGT, FAAST,** has been in the sleep technology profession for over 30 years and is

currently managing the UCSF Benioff Children's Hospital Sleep Lab. Her accomplishments include time on the AAST Board of Directors and participating on various committees. She has written articles for *A<sub>2</sub>Zzz* for many years, and has contributed chapters in sleep technology textbooks and research articles. She developed a bachelor's course in sleep technology, which she currently teaches. Kim is a recipient of the Carskadon and DeVilbiss awards and received her Fellowship with AAST in 2019.



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# Medicare Administrative Contractors (MACs) Increase Focus on Polysomnography Compliance

By Marietta B. Bibbs, BA, RPSGT, CCSH, FAAST

In late 2020, free-standing and hospital-based sleep centers began receiving communications from Medicare Administrative Contractors (MACs) asking for attestations that they were in compliance with their local coverage determinations (LCDs) for polysomnography. LCDs are decisions made by a MAC whether to cover a particular item or service in their jurisdiction (region). MACs are contracted by Medicare to develop LCDs and process Medicare claims. The MAC's decision is based on whether the service or item is considered reasonable and necessary.

The Centers for Medicare & Medicaid Services (CMS) awards geographical jurisdictions to MACs (private health care insurers). National coverage determinations (NCDs) supersede LCDs, but LCDs provide expansion on coverage policies for each jurisdiction. Coverage policies vary among LCDs related to coding, credentialing, diagnostic testing and treatment. This means that Medicare coverage can also vary depending on the geographical location. LCD contractors must follow a specified procedure to issue an LCD, including holding public meetings to discuss a draft LCD, distributing it to medical groups, posting it on their website and offering a 45-day period for public comments (posted on their websites prior to finalizing the LCD).

Although the requirements for polysomnography have been in force since 2010 with frequent revisions each year, hospital-based sleep centers have not always understood or followed the policy of their MAC. This is specifically true for hospitals that are located in a different state than their corporate headquarters. Hospitals may not be operating under the MAC for the state where it resides. This has been the focus of increased requests for attestations from the MACs.

One of the MACs in particular that has been requesting a verification review is Wisconsin Physicians Service Insurance Corporation (WPS). This issue appears to be more prevalent among hospitals that have maintained a contract with a MAC other than the one that is associated with their geographic state or region. WPS (LCD L36839) covers jurisdictions 5 and 8 (including the states of Iowa, Kansas, Missouri, Nebraska, Indiana and Michigan), but it also covers some providers outside its jurisdiction, which has been its focus for requested attestations.

Hospital-based sleep centers are usually visited by The Joint Commission (TJC) when it surveys the hospital and, in many cases, hospital-based sleep centers have assumed that The Joint Commission Hospital Accreditation Program also covered services for polysomnography; however, in 2017-2018, four MACs (WPS, CGS, Noridian and Palmetto) revised their LCD policies for polysomnography and issued a determination that The Joint

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*Hospital-based sleep centers that are not accredited by an appropriate body are now making a concerted effort to ensure that they are compliant with MAC rules.*

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Commission Hospital Accreditation was not sufficient for payment of polysomnography services but TJC accrediting a general hospital as an ambulatory care sleep center is sufficient. TJC accreditation for the general hospital does not meet WPS Government Health Administrator's (GHA) credentialing requirements since it is not the same as a sleep-specific accreditation.

Hospital-based sleep centers that are not accredited by an appropriate body are now making a concerted effort to ensure that they are compliant with MAC rules, which vary among jurisdictions. The required sleep center or laboratory credentials for WPS, CGS, Noridian and Palmetto specifically state that:

*The sleep facility credentials must be from:*

- *The American Academy of Sleep Medicine (AASM), inpatient or outpatient; OR*
- *The Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) sleep specific credentials for ambulatory care sleep centers; OR*
- *The Accreditation Commission for Health Care (ACHC)*

All centers billing sleep studies must maintain proper certification documentation as defined above.

The coverage criteria for some of the other MACs differ in language from WPS, CGS, Noridian and Palmetto.

# A/B MAC Jurisdictions as of June 2021

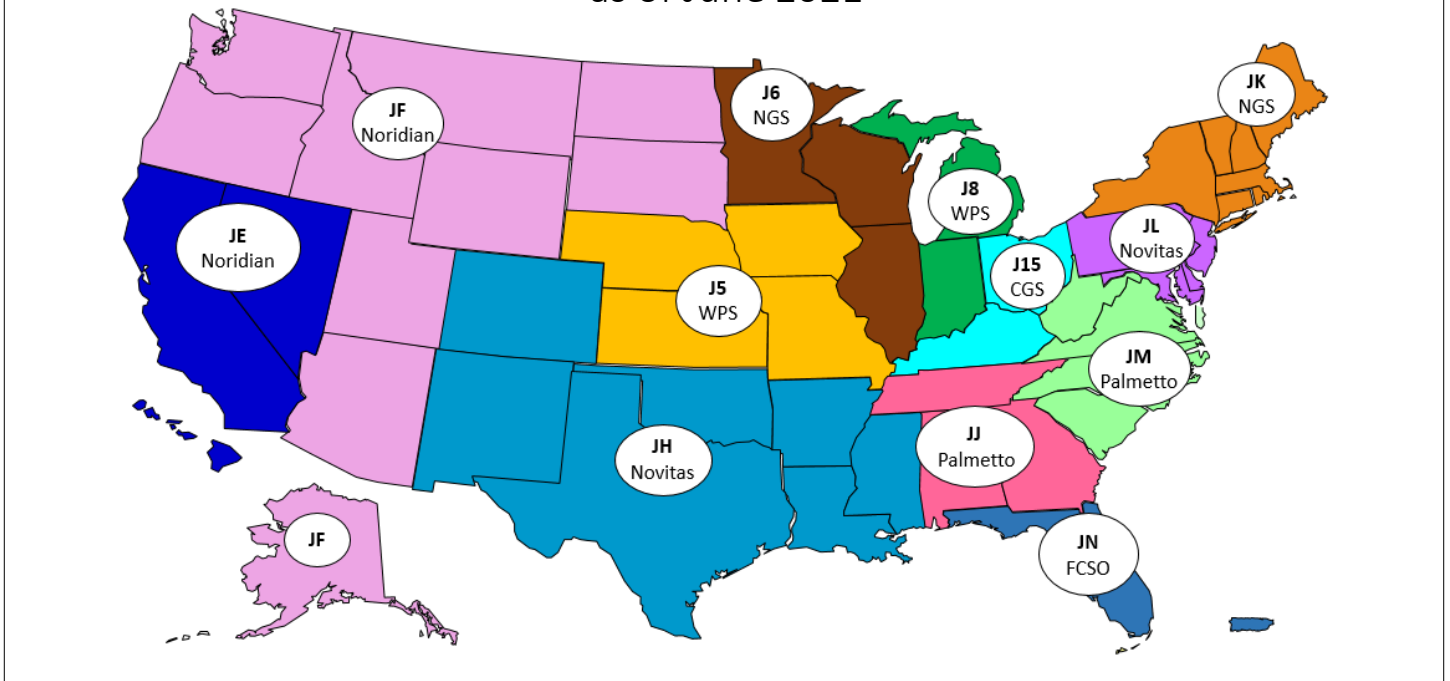


Figure 1: A/B jurisdiction map. Source: [www.cms.gov/files/document/ab-jurisdiction-map-jun-2021.pdf](http://www.cms.gov/files/document/ab-jurisdiction-map-jun-2021.pdf)

## Novitas Solutions (LCD L35050):

(Language does not specify TJC accrediting a general hospital for an ambulatory care sleep center, but is broad and only notes certification by TJC.)

All reasonable and necessary diagnostic tests given for the medical conditions listed in subsection B are covered when the following criteria are met: (Please refer to CMS Publication 100-02, Medicare Benefit Policy Manual, Chapter 15, Section 70 for complete information.)

- The hospital-based clinic is under the direction and control of physicians that are board certified or eligible in sleep medicine. All non-hospital-based facilities in addition must be certified by the AASM, The Joint Commission, or ACHC. Diagnostic testing routinely performed in sleep disorder clinics may be covered even in the absence of direct supervision by a physician.

**First Coast Options:** (Language specifically states that hospital-based sleep centers do not require an additional accreditation if under the hospital's general TJC accreditation.)

## Facility Accreditation:

In order to perform the technical component (TC) of PSG and sleep testing (including HST), the following must be met:

- The sleep center or laboratory must maintain documentation on file that indicates it is accredited by the American Academy of Sleep Medicine (AASM), Accreditation Commission for Health Care (ACHC), or that it is accredited as a sleep laboratory by the Joint Commission. If the Joint Commission survey of the general hospital accreditation includes the hospital-based sleep lab, an additional accreditation is not needed. This documentation must be available on request. The AASM, ACHC, or Joint Commission accreditation applies to the hospital and freestanding facilities (including sleep clinics that are part of a physician's office, and all other non-hospital-based facilities where sleep studies are performed).

## Why Are MACs Focused on Accreditation?

The MACs are linking accreditation and payment to deter non-accredited people from billing the federal government for services such as polysomnography and to clarify which providers should be ordering and performing these services. The MACs are focused on validating whether the polysomnography service performed is reasonable and necessary for the level of service billed. Over the past several years, there has often been a large amount of fraudulent billing for sleep services, and many sleep centers have sustained heavy fines and had to repay CMS. In its review, the Office of Inspector General (OIG) has found sleep services that did not have appropriate certified technical staff, credentialed physicians (ABSM or ABMS certification in sleep medicine or board eligible) or proper sleep center accreditation.

In June of 2019, the OIG released a report titled "Medicare Payments to Providers for Polysomnography Services Did Not Always Meet Medicare Billing Requirements A-04-17-07069." The report noted that from Jan. 1, 2014, through Dec. 31, 2015, Medicare paid free-



standing facilities, hospital and physician-based facilities approximately \$800 million for polysomnography (procedural codes 95810 and 95811). Previous OIG reviews for polysomnography services found that Medicare paid for services that did not meet Medicare requirements. These reviews identified payments for services with inappropriate diagnosis codes without required supporting documentation. Since this report, there has been increased billing for home sleep tests by companies and free-standing diagnostic testing facilities, many of which are owned by nonmedical personnel.

If visited by the OIG, documentation requests may include such things as the physician's order for treatment; documentation that supports the necessity of the sleep service, including symptoms or complaints for conditions like sleep apnea, narcolepsy and parasomnia; all progress and treatment notes for the claim date(s) of service; sleep study test results and interpretations, including documentation that supports actions taken related to results; valid clinical signatures; signature logs, including the printed names and signatures of all personnel documenting in the chart; copies of licenses and/or certifications for all personnel documenting in the chart or performing services, including the physician interpreting the test results and the technician performing the test; documentation supporting the sleep center's credentials; and documentation supporting the reason for repeated sleep studies.

If you work in a sleep facility, it is important to follow the LCD for that state or to find out if your facility may be under a jurisdiction outside the state where the facility is located. 🌙

## References

- Centers for Medicare & Medicaid Services. [Local Coverage Determination \(LCD\): Polysomnography and Other Sleep Studies \(L36861\)](#).
- CMS Publication 100-02, Medicare Benefit Policy Manual, Chapter 15, Section 70 Sleep Disorder Clinics, Subsection, B. Medical Conditions for Which Testing is Covered.
- Centers for Medicare & Medicaid Services Requirement (Chapter 15, Section 70 of the Medicare Benefit Policy Manual (Manual), Pub. No. 100-02.

## MACs Jurisdiction by State (cms.gov)

MAC Jurisdiction	MAC	Processes Part A & Part B Claims for the following states:
<b>5</b>	Wisconsin Physicians Service Government Health Administrators	Iowa, Kansas, Missouri, Nebraska
<b>6</b>	National Government Services Inc.	Illinois, Minnesota, Wisconsin
<b>8</b>	Wisconsin Physicians Service Government Health Administrators	Indiana, Michigan
<b>15</b>	CGS Administrators LLC	Kentucky, Ohio
<b>E</b>	Noridian Healthcare Solutions LLC	California, Hawaii, Nevada, American Samoa, Guam, Northern Mariana Islands
<b>F</b>	Noridian Healthcare Solutions LLC	Alaska, Arizona, Idaho, Montana, North Dakota, Oregon, South Dakota, Utah, Washington, Wyoming
<b>H</b>	Novitas Solutions Inc.	Arkansas, Colorado, New Mexico, Oklahoma, Texas, Louisiana, Mississippi
<b>J</b>	Palmetto GBA LLC	Alabama, Georgia, Tennessee
<b>K</b>	National Government Services Inc.	Connecticut, New York, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
<b>L</b>	Novitas Solutions Inc.	Delaware, District of Columbia, Maryland, New Jersey, Pennsylvania (includes Part B for counties of Arlington and Fairfax in Virginia and the city of Alexandria in Virginia)
<b>M</b>	Palmetto GBA LLC	North Carolina, South Carolina, Virginia, West Virginia (excludes Part B for the counties of Arlington and Fairfax in Virginia and the city of Alexandria in Virginia)
<b>N</b>	First Coast Service Options Inc.	Florida, Puerto Rico, U.S. Virgin Islands

Chart as of June 2021.

- American Academy of Sleep Medicine Standards for Accreditation. [AASM-Facility-Standards-for-Accreditation-8.2020.pdf](#).
- [ACHC Sleep Accreditation Standards](#)
- The Joint Commission New Requirements for Ambulatory Care Organizations Providing Sleep Center Services. [Ambulatory Health Care Accreditation | The Joint Commission](#).



**MARIETTA B. BIBBS, BA, RPSGT, CCSH, FFAST**, is the system manager of sleep disorders services and clinical research coordinator at BayCare Health System in Clearwater, Florida. She is the 29th person to achieve registration in sleep technology and 35th to achieve the CCSH credential. Marietta is a past president of the Board of Polysomnographic Technologists (BRPT) and past chair of the BRPT Exam Development Committee. She served two terms as member-at-large on the Board of the American Association of Sleep Technologists (AAST) and is a past member of the American Academy of Sleep Medicine's Scoring Manual Committee, the AAST Educational Advisory Committee and the AAST Healthcare Reform Committee. She currently serves on the AASM Diversity, Equity and Inclusion Committee and The National Sleep Foundation's Communication Committee, and she coordinates the annual Southern Sleep Society Meeting. Marietta is a past recipient of both the Elliott Weitzman Award and the McGregor Award through AAST and received the BRPT's Shining Star Award.

# COVID-19 and School Start Times

*Interview by Hannah Durnas*

As we see some light at the end of the tunnel with the U.S. advancing the rollout of COVID-19 vaccines, we also are seeing many school districts having students return to in-person or hybrid learning. The debate around what time school should start has always been a point of discussion for sleep professionals, physicians and parents.

AAST, in support of and alignment with [Start School Later Inc.](#), has advocated that schools require no child of any age to be in class before 8 a.m. and no adolescent be in class before 8:30 a.m.

AAST Marketing Manager Hannah Durnas recently had the opportunity to further explore this topic, as well as how the pandemic has changed the recommendations and future thinking with Terra Ziporyn Snider, PhD, executive director and co-founder of Start School Later Inc.

## Before the pandemic, what was the recommendation for school start times by Start School Later (SSL)?

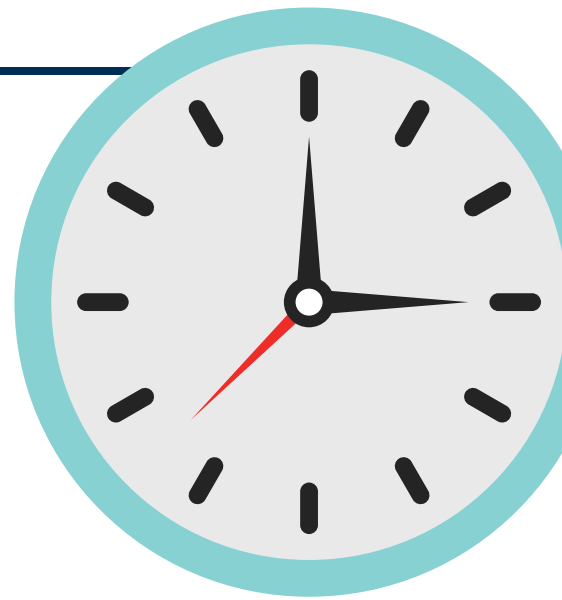
SSL's recommendation from its very beginning has been that no child of any age should be required to attend school at unsafe, unhealthy hours. Based on current research, that means we recommend that schools require no child of any age to be in class before 8 a.m. and no adolescent before 8:30 a.m. That latter position reflects the overwhelming consensus of research, including recommendations by the American Pediatrics Association, American Medical Association and the American Academy of Sleep Medicine.

We also recommend that any comprehensive assessment of factors involved in setting school schedules should include a rigorous examination of the impact of school start times on elementary students. While there is an overwhelmingly clear evidence base for the harm of early start times across multiple domains in middle/high school students (e.g., depression, academic failure, lower graduation rates and increased motor vehicle crashes), existing evidence is still too limited to determine the impact of any particular bell time on the sleep of elementary school students.

We strongly encourage more research about the impact of school hours on younger children, particularly more impact studies in districts that move middle and high school start times later by moving elementary start times earlier (the so-called "flip" strategy). At the same time, the lack of studies of elementary students should not serve as an automatic deterrent to implementing a measure (i.e., a later middle/high school start time) that we already know significantly reduces significant and active harm. Finally, we urge school districts to consider start time strategies that are likely to achieve equity for all students of every age, recognizing that this will require some degree of compromise among all stakeholders.

## Has the pandemic changed SSL's recommendations for school start times? If yes, how so?

In short, no. In fact, if anything, the pandemic has provided even more evidence that starting school no earlier than 8:30 a.m. is better for adolescents. COVID-19 school shutdowns have provided an unprecedented, populationwide experiment confirming what sleep researchers already predicted about how teenagers would sleep when allowed to do what their bodies need, rather than constrained by artificial school schedules.



Shortly after virtual schooling began last spring, families told us their lives were transformed because their teenagers no longer had to wake at dawn or deprive themselves of sleep to attend class. Subsequent survey data have borne out these observations, showing that although virtual school and COVID-19 are taking a predictable toll on mental health, the increased and better-timed sleep during the pandemic have helped compensate for these challenges in many adolescents.

## What other impacts to sleep recommendations have you witnessed because of the pandemic?

The most exciting impact is the decision by more and more school districts to keep the later hours they have been using during the pandemic when in-person schooling begins.

COVID-19 made it obvious that most American middle and high schools needed to start later. All the excuses for not changing schedules vanished overnight. There was no more busing to worry about, no more after-school sports or other extracurricular activities. The truth is that these and other logistical concerns about

the difficulty of changing schedules were never unresolvable — and many turned out to be overblown.

When COVID-19 closed down school (and life) as we knew it, all kinds of changes that previously seemed unimaginable or impossible suddenly became imaginable and possible. Suddenly everyone could see that it was indeed possible to run schools at times that gave students a chance for healthy sleep. That is why many school communities that had been

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*We know from experience that when schools start too early in the morning, most adolescents simply cannot get enough sleep at the times their growing brains and bodies most need it.*

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trying to find ways to delay bell times for years at last began realizing that this was a once-in-a-generation opportunity to change.

### **In a post-pandemic world, what permanent changes to school start times do you hope come from this time?**

As mentioned earlier, our hope at Start School Later is that schools establish hours that allow for healthy sleep and that they value sleep-friendly schedules as a nonnegotiable requirement as fundamental as providing students with clean air and water.

### **For schools switching back to 100% in-person schooling but still planning on having early start times, what hurdles do you foresee children having to overcome after working remotely for over a year and being on schedules that are more conducive to daily remote learning?**

If schools go back to the very early hours they used before the pandemic — and we believe that many of them unfortunately will — students and families will face the same hurdles they faced before the pandemic. We know from experience that when schools start too early in the morning, most adolescents simply cannot get enough sleep at the times their growing brains and bodies most need it, putting them at risk for both acute and long-term physical and mental health problems, car crashes, substance misuse and subpar performance at school, on the playing field and elsewhere.

### **What can sleep professionals do to help support SSL's efforts during this time?**

The role of sleep professionals in helping schools ensure sleep-friendly school hours cannot be overestimated. Sleep professionals can play a major role in building this public understanding of sleep in their professional role by talking to patients about the importance of sleep-friendly school start times, encouraging them to become advocates for sleep-friendly school hours and distributing SSL sleep education materials in their offices. Even more helpful is stepping out of their clinical role and modeling healthy sleep — which can be critical in changing public beliefs and behaviors — and becoming community advocates for sleep-friendly school start times. For example, sleep professionals can make a huge difference by joining with other community advocates to meet with school leaders, speaking at community events and testifying at legislative hearings about how and why sleep matters. They can also join, start or even lead a local

Start School Later chapter, which connects them to other advocacy efforts and resources from around the country and the world.

Additionally, any efforts by sleep professionals to educate communities about sleep creates a win-win situation for both students and for the sleep profession, because when communities understand that sleep matters, they are more likely to value later school start times and the services of sleep professionals.

### **What changes or messages should sleep professionals be sharing with their patients and patients' families about school start times during the pandemic? Under normal school conditions for those that are back to in-person schooling every day?**

Education and advocacy efforts by sleep professionals can play a critical role in helping communities establish and retain school hours that allow for healthy sleep. The most important message they can share — and that often is overlooked — involves explaining why sleep matters to the health, safety and well-being of everyone in the community.

Getting this message across boils down to a few simple statements:

- When school starts too early in the morning, it is nearly impossible for most adolescents to get enough sleep at times their growing brains and bodies most need it.
- This takes a toll on their growth and development, physical and mental health, safety and overall well-being.
- It also takes a toll on families, who have to struggle with sleep-deprived adolescents every day, and on the public at large. 🌙



**HANNAH DURNAS** is the marketing manager for AAST.

# Compliance Corner

With Laura Linley, CRT, RPSGT, FAAST

## COVID-19 and Quarantine Fatigue: Remember to Take Care of the Basics

Well, we made it — and it hasn't been easy! We are a year out from when COVID-19 was declared a U.S. public health emergency, and what a year it has been. This pandemic has altered the way we work and live. This year has intensified feelings of stress and has created uncertainty about the future for many people. New routines and behaviors such as wearing masks and social distancing along with frequent messages about hand washing and cleaning are chronic reminders of our new normal, and this has been shown to increase stress, anxiety and fatigue. Add to that the general concern for our health, our loved ones' health and any financial stressors and we have found ourselves dealing with unprecedented, prolonged stress. As sleep professionals, we understand that fatigue is linked to different health concerns and that we must address this with our team members. Effective employment strategies to mitigate fatigue include clear communication about safety policies and procedures and education on how to implement plans at all levels to ensure organizational safety. Now is the time to check in and listen to our team members to fully understand how these new demands may affect their quality of home and work life.

Fatigue in the workplace is commonly associated with shift work, the long work hours and the resulting poor sleep. However, other behaviors can also cause fatigue. This becomes serious as not only does fatigue make it hard to concentrate, impair judgement and limit short-term memory, fatigue may also be a symptom of depression or other mental health challenges. Poor sleep can intensify existing mental health issues such as insomnia and is a risk factor for post-traumatic stress disorder. It is important for us to acknowledge that this is happening to our team members and our patients.

The Centers for Disease Control and Prevention (CDC) has recognized the importance of mitigating fatigue in the workplace. I found it interesting to reference the CDC support pages and look at the different blogs on their website about stress mitigation strategies, well-being solutions and sleep tips for difficult times. I found an interesting link to the November 2020 issue of [The Synergist](#). The information on stress and fatigue among health care workers is timely and informative. Especially interesting is the point that as the pandemic progresses, health care workers are reporting an overall exacerbation of existing mental health issues such as depression, anxiety and insomnia. This was attributed to limited resources, overwhelming workload, process inefficiencies and an overall lack of preparedness.

Make it a point to revisit the importance of sleep hygiene with your team members and reassess the education you are providing your



By: Kevin Asp, CRT, RPSGT on October 2nd, 2015 Print/Save as PDF

### Sleep Hygiene Tips to help you sleep better

SLEEP TECHNOLOGIST ADVICE

#### Following these sleep hygiene tips can make a difference in the quality of your sleep

Do you think you're maintaining a healthy sleep habit?

Your behavior when you're awake can have a major impact on how and when you get your sleep. That's why it's important that you pay attention to your actions during the day, especially before bedtime, as it can affect how easily you'll fall asleep, stay asleep and whether you can get restful sleep.

patients on the matter. Now is a good time to look at our available resources on basic sleep hygiene. [This AAST blog](#) outlines sleep hygiene tips to help you sleep better. The American Academy of Sleep Medicine (AASM) updated its recommendations for healthy sleep and included [quick sleep tips](#) in August of 2020. The AAST Education Advisory Committee has been busy organizing free educational webinars and addressing ways to navigate the current health care environment; you can access these webinars at <https://www.aastweb.org/pasteducationalofferings>.

This is also a good time to revisit Employee Assistance Programs (EAP). EAP programs offer a no cost confidential assessment that can identify what services are able to help address concerns such as:

- Depression, stress, anxiety or substance abuse issues
- Relationship issues at home or work
- Emotional issues or grief
- Legal or financial assistance

One thing that is for certain during these uncertain times is the importance of working together to best understand how to navigate these unprecedented times. Recognizing worker fatigue and the amount of stress related to COVID-19 is a reason to develop targeted, efficient strategies to help our team members and our patients manage. As the economy reopens, regularly address changes in work hours and routine organizational practices to support healthy behaviors and practices as workers adjust to the "new normal." 🌙



# AAST COVID-19 Resources Roundup

By AAST HQ

2020 was difficult for everyone, and AAST has worked hard this past year to support its members and their needs. As the premier community for sleep-care professionals, the past 12+ months have allowed AAST, its members and the sleep community to come together to share resources, support educational opportunities and adapt to the "new normal."

With the widespread rollout of vaccines now available, we are hopeful that the sleep technologist community can come together soon and safely meet in person again. While it will still be some time, we'd like to take a moment to remind AAST members of the COVID-19 resources AAST has made, and continues to make, available.

## AAST COVID-19 Town Hall Recordings

### **Providing Sleep Center Services Amid the COVID-19 Pandemic**

In May 2020, AAST hosted an online discussion for sleep center managers and staff who wish to avail themselves of some of the many ways sleep organizations are striving to keep their staff and patients safe during the sleep diagnosis, testing and follow-up process. Speakers included Julie DeWitte, RCP, RPSGT, RST; Brendan Duffy, RPSGT, RST, CCSH; George Evans, RPSGT, RST; Mike Furgason, RPSGT, RST, CCSH; Karin Johnson, MD; and Laura Linley, CRT, RPSGT, FFAST.

To watch the recording, visit the [AAST COVID-19 resources page](#). To view Q&As from the presentation, [click here](#).

### **Sleep Center Return to Work Resources During the COVID-19 Pandemic**

In July 2020, sleep center managers and thought leaders in sleep technology from around the U.S. convened for another AAST town hall to discuss updates on how to provide a safe environment for staff and patients in the sleep center. While each

The banner features a purple and blue gradient background with a large, stylized virus illustration in shades of pink and purple. The title "Sleep and Sleep Apnea in the COVID-19 Era" is written in white, bold, sans-serif font. A "SUBSCRIBE" button is in the top right corner. Below the title, there is a small circular profile picture of Robert Ledda, MD, and the text "By: Robert Ledda, MD on June 11th, 2020". A "Print/Save as PDF" icon is also present. At the bottom, the title is repeated in blue, and "OBSTRUCTIVE SLEEP APNEA | COVID-19" is written in small grey text.

state and facility continue to reopen, or expand services, all sleep centers are continuing to work toward providing safe care for patients and staff. Panelists discussed strategies that sleep centers are using or planning to use to operate safely, provided some suggestions for screening patients and staff, discussed COVID-19 pre-testing strategies for sleep patients and provided tips on how to maintain a clean environment in the sleep center. Speakers included Dottie Covey-Elleby, BS, RPSGT; Brendan Duffy, RPSGT, RST, CCSH; Laree J. Fordyce, CCRP, RPSGT, RST, CCSH; Teofilo Lee-Chiong, MD; and Leigh Veasey. To watch the recording and access the Q&As, visit the [AAST COVID-19 resources page](#).

## COVID-19 Blogs

### [Sleep and Sleep Apnea in the COVID-19 Era](#)

In this recap of Dr. Robert Ledda's YouTube video on the scientific evidence pointing to the association between metabolic diseases and poor sleep, learn key takeaways as well as how you can talk to your patients about sleeping well and staying healthy during these times.

### [COVID-19 \(Coronavirus\) and Sleep Centers: Risks, Precautions and Recommendations](#)

Learn about the continued risks COVID-19 could have on sleep centers, precautions you and your center/lab can take, and recommendations to limit transmission.

### [Pandemic Dreams or COVID-19 Nightmares? \(Social Isolation, Stress and Sleep Hygiene\)](#)

Since the start of COVID-19, people around the world have been having bad dreams/nightmares associated with the pandemic. Termed "pandemic dreams," these new and sometimes frightening experiences can be unsettling and confusing to many. Learn why these dreams are popping up more and more and tips to help minimize the stress that leads to these nightmares.

## Additional Resources

Our [COVID-19 webpage](#) also provides a robust list of resources on various topics to keep you informed, such as updates from medical organizations, stress management and working remotely.

AAST is here to support you during this time. Need help? Contact us at [info@astweb.org](mailto:info@astweb.org). ☾