



Contents

SAS Year In Review..... 1

SAS Spotlight..... 2
Kreilkamp Trucking, Inc

Validity of Home Sleep Testing..... 3

DOT 411..... 4
The Future of Sleep Apnea in the Trucking Industry
Validity of Home Sleep Testing continued

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Sleep Apnea Solutions Year In Review

The past year had several considerable changes for Sleep Apnea Solutions, (SAS). Our collaboration with like-minded individuals helped us increase the availability of home testing and treatment of sleep apnea for a largely underserved patient population.

On April 14, 2010 we received The Joint Commission Gold Seal of Approval and official award letter certifying SAS as an Accredited Ambulatory Diagnostic Health Care Organization specializing in Sleep Testing. Accreditation is a significant step for SAS because it recognizes our dedication to providing high quality patient care.

By working in tandem with different individuals and organizations, we focused on developing protocols that ensure appropriate, accurate and affordable testing. This is a marker of success for SAS because it increased discourse and mutual education regarding sleep medicine, while improving and streamlining patient care. It also allowed us the opportunity to work together with primary care physicians to implement a unique continuity of care for sleep apnea patients.

Our corporate programs are a resource for employer's to help screen, test, and treat their employees for sleep apnea. The employer's involvement in these programs has revealed superior outcomes and above average compliance rates among employees. SAS hopes to increase the number of

companies it works with as a means to reach more individuals.

Another positive development was the acceptance of the unattended sleep study (CPT 95806) by many insurance companies. The financial implications of the home sleep test in comparison to a full polysomnography are significant. This increased the availability of testing for many individuals who could not afford the co-insurance of a full lab study and would otherwise remain undiagnosed and untreated. We see this as a major step in the right direction, but there are more advancements to be made.

For the past two years, we have focused on the diagnostic aspect of care. While this is more than sufficient to establish a foundation for successful treatment on PAP, in the coming year we hope to continue developing innovative ways to improve patient care and compliance with therapy after testing.

Our primary goal for the coming year is to reach, test, and treat more individuals in this non-traditional manner. We will continue to develop our protocols to avoid complacency. We will seek new opportunities to improve access, affordability, and outcomes. Increasing education, dialogue, and collaboration between health professionals and employers will be integral in this progress. We are confident and excited that our experiences in the past year educated and prepared us to make a positive impact in the future.



SAS Spotlight Presents:



Kreilkamp Trucking, Inc. began in 1935 and is based in Allenton, WI. Beginning in 2009, Kreilkamp partnered with SAS to develop a sleep apnea program that allows Kreilkamp drivers to remain safely on the road.

How have you addressed sleep apnea within your company?

All incoming drivers and re-certifications of DOT physicals are given the Berlin Questionnaire. Upon a positive result on the quiz, drivers proceed through the SAS process. They are issued a home study device, take the test, obtain results and are issued equipment if necessary.

What made you offer this program to address sleep apnea with your employees?

Kreilkamp is a very pro-active company. We read articles in various publications and heard presentations regarding sleep apnea. We are aware of the possibility of regulations being mandated for sleep apnea under the Federal DOT physical. With these sources and consistent contact from SAS, we decided to implement a program that makes sense.

The cost and time of a clinical study concerned us as it did our employees. When SAS offered the home study program, the ease of our employees taking the test in their trucks or at home, in addition to the considerable savings on testing and equipment presented positive solutions to our concerns.

What has been the benefit of the Sleep Apnea Management Program to Kreilkamp?

It offers our drivers a low-cost alternative to a clinical study with the same type of results they would achieve by spending an uncomfortable evening in a clinical environment. Home time is important to our drivers and when most are home,

they don't appreciate spending their night in a clinic. Our company has been able to reduce the amount of money spent in insurance claims and, in addition, we have direct knowledge of which drivers have sleep apnea and are able to track their compliance if necessary.

How have your employees reacted to the program?

There are generally variable reactions in everything. Drivers often become angry after taking the DOT physical and being told they are a likely candidate for sleep apnea. After having the SAS program explained to them, they often appreciate the program we are able to offer. The grapevine in trucking is such that we now have drivers coming to us asking about the available program.

Would you do anything differently if you could?

No. SAS has worked through everything with us and we feel it has become a valuable program for our company.

What advice would you give to employers who are 'on the fence' about supporting a corporate sleep apnea program?

When a driver is positive for sleep apnea and they have received their equipment, the difference in the driver's behavior is noticeable. They feel better, their production improves and in general they are a better employee to work with. The cost savings is always a positive to look at but the personal side is very rewarding also.

Why did you choose to work with SAS over another company?

They were willing to work with us and our clinic to come up with a program that fit our company.

"When a driver is positive for sleep apnea and they have received their equipment, the difference in the driver's behavior is noticeable. They feel better, their production improves and, in general, they are a better employee to work with."

~Sue Murphy, Safety Manager



The Validity of Home Sleep Testing

As health care providers, we strive to provide the best outcome for every patient. Concerning sleep apnea, this means successful testing and treating. Providing appropriate, accurate, affordable, and accessible testing is essential to achieving positive outcomes.

When appropriately performed, studies show the ambulatory diagnosis of obstructive sleep apnea (OSA) through the use of a home sleep test (HST) and an Automatic Positive Airway Pressure (APAP) titration machine is as effective as a split-night Polysomnography (PSG). In 2007, the American Academy of Sleep Medicine released clinical guidelines for properly performing ambulatory sleep testingⁱ requiring a preliminary clinical screening to determine candidacy. In addition, the diagnostic facility must have a registered polysomnographic technologist (RPSGT) score the study, and a board-certified sleep physician to complete the interpretation.

The main distinction between a HST and a lab study is the number of channels monitored. Full PSG monitor 20+ channels and are effective in diagnosing many different sleep disorders. HSTs monitor 4+ channels and are used primarily in diagnosing OSA. For candidates who are at high risk for OSA and have no indications of other sleep disorders, unattended HSTs are sufficient.

“After being validated at the laboratory against full PSG, the diagnostic performance of a type 3 [portable monitor] for detecting [obstructive sleep apnea syndrome] at the home is within acceptable limits for diagnostic test.”ⁱⁱ

Using a device that has validation research supporting efficacy is imperative to ensure an appropriate test and positive outcomes. The ApneaLinkⁱⁱⁱ and Stardust^{iv}, among other devices, have been validated and have comparable outcomes to a PSG in diagnosing OSA. In our experience, with proper education and coaching, the

failure rate of diagnostic testing is less than 5 percent. If diagnostic findings indicate OSA, an APAP can be prescribed for successful titration. Studies show that APAP is as effective in providing a treatment pressure as an in-lab titration. Additionally, outcomes in an ambulatory model are similar to those found with PSG testing. “...PSG confers no advantage over the ambulatory approach in terms of diagnosis and CPAP titration. The ambulatory approach may improve adherence to treatment.”^v Similarly, a study monitoring the long-term outcomes for patients found that “those patients using CPAP at 6 weeks, the CPAP adherence and improvement in subjective sleepiness and quality of life measures were similar in the two study arms [PSG and ambulatory]”.^{vi}

Positive outcomes rely on patient participation in diagnosis and treatment. The Wisconsin Cohort Study was conducted primarily to assess the frequency and public impact of sleep disordered breathing. However, we can gather other information from the research conducted. For example, “The participation rate [in the Wisconsin Cohort Study] was 43 percent. The most common reason for declining to participate was the inconvenience of sleeping away from home.”^{vii} Similarly, a study comparing ambulatory diagnosis to PSG lab testing found, “Given the opportunity, the majority (62 percent) of patients in the PSG group would have preferred home management, whereas only 6 percent of patients in the ambulatory group would have preferred sleep laboratory management.”

(Continued on page 4)





The Future of Sleep Apnea in the Trucking Industry

Validity of Home Sleep Testing

Cont. from page 3

Because untreated sleep apnea is such a growing epidemic, in order to relieve the burden on our health care system, having realistic options is essential to maximize the number of individuals tested and treated. Most agree that the cost of testing and treating sleep apnea outweighs the health costs associated.^{viii} Finding a more efficient and cost effective way to test and treat this epidemic will help not only the patient, but the health care system as well.

In order to obtain successful outcomes for patients, sleep medicine must find testing and treatment options for sleep apnea. PSGs are effective and accurate, but unrealistic for many patients and may not always be the best option. Ambulatory testing for OSA provides an effective, accurate, and cost effective alternative to the full PSG. Using HSTs and APAP when appropriate will provide positive outcomes and should be considered when evaluating individuals at risk for OSA.

i. Collop, M.D., Nancy A. et al. "Clinical Guidelines for the Use of Unattended Portable Monitors in the Diagnosis of Obstructive Sleep Apnea in Adult Patients." SLEEP 3, no. 7 (2007): 737-747.
ii. Oliveira, Ana, et al. "Diagnosis of Obstructive Sleep Apnea Syndrome and Its Outcomes With Home Portable Monitoring." Chest 135, no. 2 (2009): 330-336.
iii. Ng, S.S.S. et al. "Validation of a portable recording device (ApneaLink) for identify patient with suspected Obstructive Sleep Apnoea Syndrome." Internal Medicine Journal 39, no. 11 (2009): 757-762.
iv. Santos-Silva, Rogerio, et al. "Validation of a Portable Monitoring System for the Diagnosis of Obstructive Sleep Apnea Syndrome." SLEEP 32, no. 5 (2009): 629-636.
v. Mulgrew, Alan, et al. "Diagnosis and Initial management of Obstructive Sleep Apnea without Polysomnography." Annals of Internal medicine 146 no. 3 (2007): 157-166.
vi. Berry, Richard B. et al. "Portable monitoring and Autotitration versus Polysomnography for the Diagnosis and Treatment of Sleep Apnea." SLEEP 31 no. 10 (2008): 1423-1431.
vii. Young, Terry, et al. "The Occurrence of Sleep-Disordered Breathing among Middle-Aged Adults." The New England Journal of Medicine 328 no. 17 (1993): 1230-1235.
viii. Kapur, Vishesh, et al. "The Medical Cost of Undiagnosed Sleep Apnea." SLEEP 22, no. 6 (1999): 749-755.

DOT medical examiners are becoming more conscious of obstructive sleep apnea (OSA). As a result, the screening protocols for OSA are becoming more uniform, explicit, and strictly enforced. While every medical examiner has different protocols, over the next year screening efforts will continue to increase. Commercial drivers with any indication of OSA may be denied permanent certification. More often than not, these drivers are unable to pay for the medically necessary testing and treatment. In these situations, a reactive approach results in a fragmented version of patient care, yielding poor outcomes.

The future of sleep apnea identification and treatment in the transportation industry will rely heavily on three key factors; first, the adaptability of occupational health professionals, second, the contribution of primary care physicians, and third, the involvement of employers in directing and sponsoring an OSA Management Program. The home sleep test (HST) must play a significant role for employers, at risk drivers, and medical professionals alike. If done right, a program will follow protocols that ensure:

- **Individuals are prescreened, verifying he/she is at high risk and a candidate for a HST**
- **Tests are scored by a Registered Polysomnography Technician**
- **A Board Certified Sleep Specialist interprets results**
- **A treatment program that offers 24/7/365 support and compliance monitoring**

Over the past four years, SAS has worked with several trucking and manufacturing companies to develop proactive sleep apnea programs; putting the driver and employer first, while still adhering to the DOT recommendations on OSA. The alternative full-lab study is expensive and unrealistic for many drivers at high risk. While not every individual is a candidate for a HST, using only polysomnography (PSG) studies will overload the traditional medical system, especially when there are no indications of other sleep disorders, increasing the wait time and overall cost of testing. **Ignoring the HST as a viable option and utilizing only full PSG studies will be a costly mistake to both drivers and employers.**

Whether the prescription for testing comes from the occupational health provider or the primary care physician, the importance of the employer in the process is imperative. PAP therapy with compliance monitoring is the best way to objectively document successful OSA treatment. In our experience, 30% of individuals are motivated but struggle with treatment. A support system including employer involvement is essential for those who struggle with therapy compliance. Without it, many more commercial drivers will be forced into a career change.