

A TECHNOLOGIST'S INTRODUCTION TO SLEEP TELEMEDICINE

By Tamara Sellman, RPSGT, CCSH

Discussions between sleep technologists in forums or at conferences are peppered with new healthcare topics. Telemedicine is one such topic drawing discussion: what it is, how it works, and who can work in the field. Sleep medicine has become one of the most active fields using telehealth, as many of its applications save time and money for both physicians and patients.

WHAT IS SLEEP TELEMEDICINE?

Before you understand specifically how sleep telemedicine works, you need to understand the roots of telemedicine.

The American Telemedicine Association (ATA) defines telemedicine (also known variously as remote medicine, remote healthcare, distance medicine, teled, telehealth, mobile health, or mhealth) as “the use of medical information exchanged from one site to another via electronic communications to improve a patient’s clinical health status.”

Despite it being a “new idea” in the healthcare landscape, telemedicine has been practiced for four decades as a branch of the larger arena of healthcare information technology (HIT).

Other forms of HIT already being used include:

- Electronic medical records
- Two-way video conferences
- Secured email communications
- Digital image file transfer
- Mobile recording devices and applications
- Wearable monitors and sensors
- Remote wireless monitoring tools
- Secured social media access points

- Digital health information exchanges
- Nursing call centers
- Patient portals to view records and facilitate dialog

Whatever else you might think about it, know this: telemedicine is not a separate medical specialty. How one sleep health provider uses telehealth will vastly differ from any other based on their patients’ needs and community’s overall access to HIT services. Telemedicine uses a hybrid of digital and virtual interfaces based on (and sometimes still using) conventional aspects of the continuum of care to generate interactivity between patients and their doctors.

Continuum of care is defined by the Healthcare Information and Management Systems Society (HIMSS) as the “concept involving a system that guides and tracks patients over time through a comprehensive array of health services spanning all levels and intensity of care.”

WHY THE TREND?

Hospitals have always needed to extend care to patients in remote areas. In the 21st century, the technologies have risen to the demands and needs of healthcare providers.

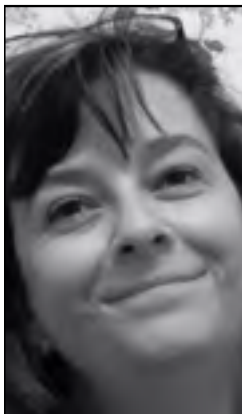
The ATA reports that the US currently hosts about 200 teled networks and 3,500 service locations, and this number will continue to grow. Millions of Americans are already using telemedicine to some degree, whether it be through the use of remote cardiac monitors, patient portals, or hospital-sanctioned wearable devices. Half of all US hospitals use some form of telemedicine as well.

SLEEP TELEMEDICINE IN 2016

Players

In January 2016, AASM SleepTM was launched by the American Academy of Sleep Medicine (AASM). This latest platform enables patients to access sleep healthcare from any location; it uses a secured internet-based platform to conduct patient-to-doctor videoconferences and doctor’s visits.

One month later, IBM’s Watson Health joined the American Sleep Apnea Association (ASAA) to launch the SleepHealth app (which introduced Night Shift, the new evening light-blocking feature) and the SleepHealth Mobile Study, which runs on Apple’s ResearchKit platform and uses the iPhone or Apple Watch.



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The SleepHealth Mobile Study hopes to collect user-reported data on a wide range of sleep metrics, including quality and length of sleep, snoring, restlessness, and the impact of behavioral and external factors, such as sleep hygiene and environment.

Author David Agus, MD described the benefits of telemedicine to patients in the age of Big Data in an excerpt from his book, *The Lucky Years: How to Thrive in the Brave New World of Health*, published in last January's *Fortune*:

“In some cases it entails live video consultations with doctors available 24 hours a day, who can offer advice, prescribe medicine, and suggest follow-up care. Some towns have installed kiosks where patients can enter and have their vital signs checked while talking with a doctor at a distant major university. All of this will help achieve the best outcome if used correctly.”

Services

A recent report in *SLEEP* suggests that users of telemedicine-based obstructive sleep apnea (OSA) management were highly satisfied with this option.

Outcomes, dropout rates, and adherence statistics of users were measured in research conducted by Emory University and the Atlanta VA. The results were comparable to those who paid face-to-face visits to clinics for the same services. Convenience and not having to travel long distances were two benefits expressed by patients using sleep telehealth services.

Swedish TeleSleep Services in Seattle is one such example. This full-service, hospital-based healthcare provider offers initial evaluations to adult or pediatric patients when specialized exams are not readily available closer to home. Their telehealth technology links patients and their primary care providers to Swedish sleep specialists without needing to be physically located in the same office.

A thorough consultation and exam occurs at the patient's primary provider's office using monitors which connect with the specialists; a specially trained healthcare worker known as a telepresenter conducts the evaluation and transmits necessary medical information from the patient to the sleep specialist using a secure telehealth connection via the Internet.

Other sleep telemedicine services orbit around a patient following a sleep study. Already, home sleep apnea testing (HSAT) contributes to health information technology. Remote scoring of in-lab PSG studies is another extension of sleep telehealth.

Follow up with patients can now take place using secured Skype-style teleconferences. Remote monitoring of CPAP usage and

compliance—and of oral device therapy usage, for certain models embedded with tracking chips—helps patients and doctors keep focused on outcomes. Patients can also, in some cases, download their own PAP stats onto Windows-based software for review.

In addition, some companies, like SomnoSure in St. Louis, MO, offer real-time services using phone and Internet technologies to monitor and assist patients with PAP-related problems literally the moment they have them.

Jobs

There will always be a need for respiratory therapists and sleep technologists in every facet of sleep medicine. Despite the increase in the use of HSATs, many patients do not qualify for these tests and require face-to-face visits with sleep specialists.

However, sleep telemedicine may also expand our scope of practice to offer positions as patient presenters, case managers, or sleep educators for many patients who may not need an overnight study. These jobs (most of them daytime positions) will most likely be filled with those who possess RPSGT, CCSH, or nursing credentials.

Scoring technologists may have more options in the field of remote scoring, as well, either working directly for a single employer or on a freelance basis.

Beneficiaries

Veterans' hospitals are the largest single population of users right now, but sleep telemedicine has the power to reach out to people in rural locations who cannot afford the travel costs of interacting with sleep physicians located several hours away.

Likewise, people who are disabled or chronically ill may find a sleep telehealth option far easier to manage if mobility or symptoms are barriers to office visits.

Finally, the state of Texas is using sleep telemedicine in its incarceration system to cut healthcare costs.

Reimbursements

No distinction is usually made between services provided on site and those provided through telemedicine, according to the ATA. Neither is separate coding usually required for billing remote services.

However, distinctions among specific payers and limitations should be considered carefully. More than half of all states require private insurers to cover telemedicine services, with more insurance companies starting to expand their coverage.

Medicare and Medicaid have some particular limitations to



WEB-BASED TELEMEDICINE PLATFORMS FACILITATE LIVE, INTERACTIVE, VIDEO CONSULTATIONS AND FOLLOW-UP VISITS BETWEEN PATIENTS AND PROVIDERS, REGARDLESS OF DISTANCE. PHOTO COURTESY OF AASM SLEEPTM.

telehealth coverage which the ATA deems arbitrary; they are pushing for changes within CMS to ensure all of their beneficiaries can receive benefits. Meanwhile, although Medicaid plans for telehealth are available in all states, the state requirements vary widely.

New legislation (the CONNECT For Health Act) was introduced to the Congress on February 2nd to promote the expansion of telehealth services through Medicare.

“Telehealth is the future of health care. It saves money and improves health outcomes,” said Senator Brian Schatz (Dem-HI). “Our bipartisan bill puts us on a path to transform health care delivery, making it less costly and more convenient for patients and providers.”

The act was referred to the Committee on Finance, where it awaits review by the Senate (as of this printing).

LEGAL LIMITATIONS FOR SLEEP TELEMEDICINE

Daniel Brown of the Daniel Brown Law Group in Atlanta wrote, in a 2014 article in *Sleep Review*, that “telemedicine practitioners’ use of 21st century technologies is sometimes limited by medical practice laws and regulations modeled on 20th century healthcare methods.”

Areas of legal focus for sleep practices providing telemedicine services include:

- Making sure your telehealth protocols are compliant with state medical board licensing.
- Holding a telemedicine license in the state where each patient is receiving sleep tests. Some states, but not all, have provisions for “out-of-state” practice with regard to telemedicine.

- Knowing the definition of “patient-physician relationship” as it pertains to telehealth jurisdiction and malpractice regulations.
- Providing the same quality of care to the virtual patient as healthcare providers do for face-to-face patients.
- Choosing discretion when ordering tests through telehealth portals; some patients really do benefit more from a live encounter.
- Acknowledging that laws about fraud and abuse apply to telehealth as well.
- Mastering the fine points of CMS requirements for telemedicine reimbursement, which can be very confusing.
- Using only HIPAA-compliant telemedicine software and procedures while providing telehealth services.
- Following FDA protocols when using smartphone applications as medical devices.

As with any application of new technology to a field, whether it’s healthcare or some other area of business, there’s bound to be a learning curve as technology is incorporated, jobs are re-imagined, and standards are set from the top down, both internally and externally.

Models of 20th century healthcare have begun to shift toward patient-centered care; working in sleep telemedicine will require vision from its practitioners (from the top down) and a concerted effort to reach out to and educate patients on the benefits of technology-based patient-doctor relationships.

It will also mean technologists will see that while some of their jobs may be threatened by the adoption of new technologies (HSAT being, perhaps, the most pressing concern in our field), there are other ways for the ambitious among us to advance our careers as sleep technologists by examining and acquiring the skill sets that sleep telemedicine demands.

REFERENCES

1. American Telemedicine Association: <http://www.american-telemed.org/>
2. Healthcare Information and Management Systems Society: <http://www HIMSS.org/>
3. Swedish Hospital Telesleep Service: <http://www.swedish.org/services/telehealth/telesleep>
4. Turning to Telehealth For a Good Night’s Sleep: <http://mhealthintelligence.com/news/turning-to-telehealth-for-a-good-nights-sleep>

5. "American Academy of Sleep Medicine (AASM) Position Paper for the Use of Telemedicine for the Diagnosis and Treatment of Sleep Disorders." Singh J, et al. *Journal of Clinical Sleep Medicine*: Oct 2015.
6. "The Doctor Will See You (and Your Data) Now." (Excerpted *The Lucky Years: How to Thrive in the Brave New World of Health*.) Agus D. *Fortune*, Jan 2016.
7. "Everything you should know about Telemedicine in Sleep Centers." Ha, Y. *AAST blog*. Dec 23, 2015."
8. "Extracting value from chaos: The promise of health information technology." Indiana University. *American Journal of Medical Sciences*, Jan 2016.
9. "mHealth Put to Work on the Science of Sleep." Wicklund, E. *mHealthIntelligence*: Mar 2, 2016.
10. "Remote Ambulatory Management of Veterans with Obstructive Sleep Apnea." Fields BG, et al. *SLEEP*, Mar 1, 2016.
11. "Senate bill would expand Medicare's telehealth coverage." Terry K. *Medscape Medical News*, Feb 5, 2016.
12. "Sleep Telemedicine Legal Tips and Traps." Brown, DB. *Sleep Review*: Sept 30, 2014. ❖

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