Case Study: Telemedicine

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Growing a Rural Sleep Clinic through Telemedicine

PHYSICIAN PROFILE

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THE PROBLEM: AN UNDERUTILIZED SLEEP LAB

Grand Forks, North Dakota is a city dominated by one hospital system. The wait for a PSG is several months. We opened a two-bed IDTF and have a steady referral source from the independent physician community. When the orders are queried, we found that most of the patients who had undergone PSG at our facility had asked their family practice physicians about sleep apnea and requested to undergo a sleep study. Physicians commented on the burdensome nature of PAP scripting, with multiple orders that are generated by the DMEs.

Our sleep lab was underutilized for the patient population. To determine why, we reviewed PCP clinic notes and asked patients how they heard about the sleep lab. The majority indicated that they either drove by or had seen an advertisement. We analyzed the metrics of our lab and determined that the majority of the referrals were patient-driven. We believed that this was due to the difficulty satisfying the insurance requirements with the information provided in a typical clinic note. Our scheduling staff told us that they often had to call the referring physician's office for clarification of their documentation in order to ensure that the study would be covered by insurance. We sensed that the PCPs were frustrated by this.

TELEMEDICINE SLEEP CONSULTATIONS

To address these problems, we started offering sleep physician consultations in an effort to reduce this frustration and to assist with the documentation requirements as well as the PAP management.

We began offering remote consultation at our sleep lab facility, while I continued practicing in my clinic in Fargo, 100 miles away. Consultations were performed using telemedicine, prior to sleep testing. Patients were able to be referred to the sleep physician by their personal physicians or they were able to self-refer to the clinic. After the initial consultation, patients who were felt to have sleep-disordered breathing underwent polysomnography in accordance with AASM guidelines. They typically underwent split-night polysomnography and then were set up on PAP therapy as scripted by the sleep physician. The patients were subsequently seen in follow up via telemedicine where the study was reviewed with the sleep physician via screen-sharing or via a printed report provided to the patient on site by the telepresenter. Download data was analyzed in a similar manner. Pressure adjustments were made if required and other trouble-shooting issues were addressed during that visit. We provided patients with both a phone number as well as a website and email address in order to facilitate communication.

All patients were treated in a similar manner to a live in-person patient. If CBT was recommended for insomnia, the identical information was shared with the patient. If narcolepsy was suspected, arrangements were made either for the patient to travel to our sleep center in Fargo, or arrangements were made for a technologist to travel and perform MSLT at the remote sleep lab in Grand Forks. This decision would often depend upon patient preference and the ability to staff the site appropriately.

After our telemedicine clinic was established, referral patterns changed slightly – more physicians began referring to the clinic rather than the sleep lab directly (although the majority of referring physicians continued to directly refer to the sleep lab). Clinic volume increased largely due to self-referred patients. Those patients also seemed to be more motivated to become compliant with treatment.

Our telemedicine clinic has been active at this site for 4 years. Referrals to the sleep lab have increased since the sleep lab opened which is due to word-of-mouth advertising specifically related to the sleep lab and also due to the accessibility of the sleep specialist via telemedicine. The DME side has also reported an increase in set-up numbers as well as re-supplies.

Our staff also spent less time calling physician offices in order to obtain the appropriate documentation. This also seemed to improve the relationships between the sleep lab and the PCP offices. Staff efficiency improved.

SETTING UP A TELEMEDICINE PRACTICE

In order to establish a telemedicine practice in Grand Forks from Fargo, we invested in telemedicine equipment that is hard-wired into both the remote site as well as the main clinic. Phone calls are routed to the main clinic and patients are scheduled according to the physician's availability. Live in person visits are interspersed with live remote telemedicine visits. The scheduling is centralized thus minimizing staff needs. Our telepresenter was trained to room the patient, operate the telemedicine equipment, collect the data card information or access the information remotely via modem, and was specifically trained to facilitate the visit. The success of this program was based upon our ability to adapt and change rapidly in response to a changing market and increasing patient autonomy. Flexible scheduling also allows patients to be seen at their convenience without having to take time off of work to travel to a distant site to receive medical care.

Much of our experience was through trial and error. Upon reflection, there are more efficient ways to accomplish this task. Direct marketing to the referring physician highlighting the telemedicine consultation should be considered rather than relying on word of mouth. This also applies to direct-to-patient advertising; however we have not considered this due to the shortage of sleep physicians in our area and current clinic wait list, but it will be considered in the future.

The greatest impact has been in managing patient expectations. Once patients understand what to expect, they appear to be willing to engage and participate in the experience. Managing patient expectations begins with the first contact to the sleep facility.

The process for the patient is smooth and every step is explained ahead of time. Our scheduler informs the patient that they will be seen remotely. She goes over the process with them and answers any questions they have. If she feels that the patient is reluctant to be seen virtually, she will schedule them in the main clinic and ask them to travel.

The telepresenter visits with the patient prior to the visit and immediately following the visit. All questions are answered before the patient leaves our facility. Our key successes lie in our ability to make the interaction as similar to a live in-person

visit as possible. This was accomplished by investing in high-quality monitors and audio equipment as well as embracing technology as it changes.

The first equipment we utilized was obtained via USDA grant funding. Our IT staff designed a secure network with multiple sites, one of which was Grand Forks. We chose the Tandberg system as it supported all of our needs at the time. The system has been upgraded and IT maintains it routinely.

We have changed to a web-based video telecommunication system at some of our sites but Grand Forks continues to utilize the Tandberg system. The monitor is large and patients are comfortable with this technology. We own this facility therefore the equipment remains on site in a dedicated telemedicine clinic space.

The most important lesson, though, was to continue to move forward even if something unforeseen occurs. Not every idea was successful but if it didn't work, we changed our process and continued to evolve our practice.

More recently, state laws changed and now an in-person visit must occur prior to scripting medications. We now ask our patients to travel to Fargo for their initial visit. If there is reluctance, we explain the reasoning. If they are willing to forego obtaining medications, we will consider seeing them virtually for their initial visit as well as subsequent follow up visits but do communicate with the patient about this issue. The vast majority of patients in my practice do not require medications so this impact has been lower than initially anticipated once the regulations changed. As we do strive to be a comprehensive sleep center, we do address any sleep-related complaints and treat them in a similar manner to an in-person visit. This, of course, may require providing a script for medications thus the reason for the procedural change in our clinic.

The recommendations and tactics described in the Evolve Sleep case studies reflect the best practices of AASM members and are not the official position or policy of the AASM.

Key Takeaways: Lessons Learned

- Communication is key – with the patient, the referring facility, the DME, scheduling staff, IT as well as nursing staff and the physician. We have invested considerable time trying to develop a smooth process for all involved.
- We err on the side of the patient – we aim to make this an enjoyable, valuable experience for the patient. If the patient expresses any reluctance or if any of our staff senses reluctance, we bring it up to the patient and try to determine the best way to proceed – do we need to schedule an in person visit? Does the nurse need to sit in on the visit? Does a family member need to be present? Our feedback has been positive with many patients appreciative of the convenience.
- Our goal is to replicate an in-person visit. We treat all sleep disorders including circadian rhythm disturbance, narcolepsy, restless leg syndrome, insufficient sleep, obstructive sleep apnea, central sleep apnea, and insomnia. The treatment pathway is identical to an in-person visit. A virtual visit should be engaging and efficient with the patients' needs prioritized.

- Our practice is nimble – we adapt readily both to evolving patient needs as well as technological advancements. The local DME provides APAPs exclusively thus eliminating the need to place patients on a loaner APAP and then transition to a CPAP. Downloads are obtained prior to each visit and if a pressure adjustment is made, a follow up download is obtained within a few weeks to ensure that the change has been effective.
- Our clinic is patient-centric. Staff is trained accordingly and they are strong patient advocates. They fully support the telemedicine model as it allows us to reach patients who might otherwise not receive sleep medicine services.