

SHOULD YOUR SLEEP LAB ADD PEDIATRIC SERVICES?

by Duane Johnson PhD



Until recently, many sleep professionals have not considered children sleep problems as an area they could serve. First, they are not aware of the immensity of children's sleep issues and marketplace. Second, they have often felt the sleep lab overhead required to do pediatric sleep studies was prohibitive.

I asked Susan Keller-Yenney, RPSGT, of SCMI's Advisory Team who has provided pediatric sleep services for many years the following questions. Here are her answers:

What key components are needed when incorporating pediatric services into an adult based sleep lab?

Staff, equipment, and facility preparation are the three components. A properly trained staff, sleep specialist and technologist, are critical to the success of a pediatric sleep program. Most sleep specialists are not trained in reading pediatric studies, and most technologists are not trained in performing pediatric sleep studies or scoring pediatric records. Pediatric training and a strong commitment to serving children are required for successful implementation of pediatric sleep services.

Additional equipment (such as an end tidal CO2 monitor and an esophageal pH meter) will have to be purchased to interface with the sleep lab's existing polygraph equipment. If pH probes are placed, competencies with staff will have to be developed and validated through proper training and skills check-offs.

A facility preparation assessment must be done to assure an environment that is safe and comfortable for children. For exam-

ple, outlets should be covered and hazards reduced along their eye level. The bedroom itself does not have to be brightly colored (if being used by adults as well) but it should contain a TV/DVD combination and a few child friendly movies. Televisions with outlets to plug in game equipment are a plus for older children. Beds for children should have rails while baby beds are required for infants and toddlers if they are to be included in your scope of practice.

What training does sleep staff need to be competent in performing pediatric sleep studies?

If a staff is trained to collect adult sleep studies, they can perform child sleep studies as well. The application techniques are somewhat different, but not drastically so. The advanced training they might require will cover the insertion of pH probes and scoring pediatric studies. In a hospital environment, the nursery or the GI lab can be a source for training on pH probe insertions. Policies and procedures for insertion will be available if the staff in these areas is performing them. In our center, we do not place pH probes in children over the age of six months.

Scoring pediatric studies is the most challenging aspect of implementing a pediatric sleep program. It requires practice and great documentation by the recording technologist. Dominant posterior rhythms must be determined to identify staging in an infant. Rules are adapted after spindle formation to closely parallel adult scoring. Educational programs for pediatric scoring are offered at institutions like the Atlanta School of Sleep Medicine and Technology (www.sleepschool.com). However, just as with learning adult sleep staging, tenacity and practice will be the key factors in building competency with pediatric staging. BCLS and age appropriate emergency equipment are mandatory as well as policies and procedures reflecting competencies in these areas.

The sleep specialist may also need training for the interpretation of sleep studies in children. Inter-reliability scoring analysis will increase both the physician and the technologist's skills. This will take time and effort by the physician. Normative data in children is vastly different than in adults and your physician should be a student of these data.

Additionally, the technologist or technician must want to perform sleep studies on children. Personality means everything and he/she must be flexible, innovative, creative, and patient. In other words, they need to be comfortable playing with children and comfortable dealing with parents. This is critical to the success of the program. As a manager, pushing a staff person to perform studies on children against their wishes and/or personal capabilities will result in poor studies, diminished patient care, and an unhappy employee.

Do parents/children require any additional information about the sleep study that will be performed?

As with adult studies, parents are mailed an information packet containing a pediatric history questionnaire, instructions, and general information for their children. At the time of scheduling the appointment, parents are asked about the child's sleep

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patterns and routine. This determines the timing of the test. Also, any special needs are identified at that time.

How should children with multiple health issues be handled?

I recommend that children with multiple health issues who are candidates for sleep disorders testing be serviced in either a pediatric hospital sleep laboratory or a pediatric sleep specialist's center whenever possible. This is because routine cases of sleep disorders in otherwise healthy children can be easily diagnosed and managed by most sleep practitioners without incident, while children who are medically compromised, should be tested in an environment with easily accessed, expert rapid response emergency care should the need arise. Hospital based sleep programs with emergency rooms onsite can equally provide this level of care depending on the staff's comfort level.

What is the standard for pediatric montages?

The standard montage is used with the addition of ETCO2 and pH channels. ETCO2 should ideally be displayed in both flow and numerical values if possible. With the new scoring changes, an appropriate montage would also include the addition of F3/F4 and 3 chin leads. Additionally, the use of a pulse wave channel is helpful to determine the accuracy of the SaO2 readings. Limb leads may be excluded on infants, if approved by the medical director.

What is the financial scenario for pediatric studies?

Financially, adding a children's program to your sleep center, may not be as profitable as an adult based center, depending on your demographics, but it can be an additional revenue source. You may require additional staffing, depending on the age of the

child, which may dictate a one tech per one patient ratio thereby impacting your personnel budget. At our center, we use a 'three and under' rule to dictate a one to one ratio. This is based on my staff's comfort level and their input. When we first started our program we had a 1:1 ratio on ages 5 and under, but after we began, the staff agreed to lower the age as their competency and comfort levels grew.

In summary, incorporating pediatric sleep services into your adult sleep lab does require additions and changes. Yet, even with profit margins potentially reduced by staffing costs, sleep study volume will be increased and staff will remain productive. You can add revenue. And you will provide a much-needed service that will fulfill your community's healthcare needs by adding pediatric sleep services to your sleep lab. Parents in your community will no longer have to go far from home to obtain sleep care for their children.

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