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What Is the Future of Sleep Medicine in the United States?

Obstructive sleep apnea (OSA) is a highly prevalent condition that is a major risk factor for many prevalent, resource-draining conditions. Furthermore, OSA endangers not only those who are afflicted with it but also innocent bystanders, because it is a clear risk factor for motor vehicle crashes (1). Treatment of OSA is associated with improved outcomes from many of its consequences, including motor vehicle accidents (1), atrial fibrillation (2), hypertension (3), and overall mortality in men (4), women (5), and the elderly (6). Thus, access to diagnosis and management of OSA would be expected to improve outcomes for many patients and has been demonstrated to be cost-effective (7).

Most recent estimates of OSA prevalence conservatively suggest 13% of men and 6% of women have clinically important OSA (defined by an apnea–hypopnea index $>$ 15/h) (8), as do 2 to 4% of school-aged children (9). A recent Swiss study found up to 50% of men had OSA with clinical consequences (10). Assuming a conservative estimate of 10% population prevalence suggests that about 30 million people in the United States alone have clinically important OSA, with many more at risk. Currently, up to 4 to 5 million people in the United States are receiving treatment for OSA, suggesting that the vast majority of OSA remains undiagnosed and undertreated (11).

There are multiple reasons for this situation. Many third-party payers require diagnosis in an accredited laboratory and involvement of a physician who is board certified in sleep medicine (which requires an additional year of training) for reimbursement. As a result, many in the current generation of pulmonologists have forgone involvement in the management of OSA or even development of expertise in the use of positive pressure ventilation for other indications. To a large extent, the minimal involvement of pulmonologists in the care of patients with OSA derives from their inability to get reimbursed for delivering care. This is likely to change because:

- Currently, the number of board-certified sleep specialists is dwindling rapidly. The numbers probably peaked around 2013, after large-scale grandfathering before the implementation of the American Board of Medical Specialties examination in sleep medicine. However, in the 2013 sleep medicine fellowship match, 64 programs offered 129 training positions starting in July 2013. About one-fourth of these positions went unfilled, and an even higher percentage went unfilled in 2014 (12). With the imminent retirement of the current cohort of grandfathered sleep specialists and a very small pipeline of future board-certified sleep specialists, the number of sleep specialists is expected to plummet over the next several years. The situation is even more serious in pediatrics, because there are currently fewer than 300 certified pediatric sleep practitioners, and fewer than 10 pediatricians enroll annually in accredited sleep medicine fellowships.
- Current insurance and industry reimbursement policies in the United States require "face-to-face" visits within 30 to 90 days after continuous positive airway pressure (CPAP) initiation, followed by annual visits (13). Although not unreasonable, this requirement is simply not feasible with the current supply of sleep-board–certified physicians available, and that pipeline is shrinking.

Something needs to change. Some potential solutions are:

1. Increased training and empowerment in the management of OSA in adult and pediatric pulmonary fellowship programs. As experts in breathing, pulmonologists are well equipped to manage sleep-disordered breathing and already have alliances with respiratory care practitioners, natural partners in this endeavor. Pulmonologists should be able to manage sleep-disordered breathing on completion of a pulmonary fellowship, given that a full 10% of the American Board of Internal Medicine pulmonary medicine examination focuses on sleep, including nonrespiratory sleep (14). The idea that a respiratory specialist is incapable of managing sleep apnea needs to change and is at odds with many other countries with high-quality healthcare.
2. Elimination of the requirement for board certification and center accreditation for reimbursement for routine OSA management. Although controversial (15), evidence (16–18) suggests that nonspecialist care is as effective and less expensive than specialist care for OSA.
3. Simplification or elimination of the Home Medical Equipment and insurance regulations/paperwork for provision of CPAP equipment and supplies. With the advent of required "face-to-face" visits and annual follow up and compliance documentation to obtain CPAP or supplies through insurance (13), accredited sleep clinics have experienced sharply increased demands for routine follow up simply for documentation purposes.
4. Increased training for generalist clinicians, including nonphysicians, in the diagnosis and chronic management of symptomatic, uncomplicated high pretest probability OSA, similar to the approach currently implemented for other chronic medical conditions such as COPD or asthma. This approach has already begun to happen in the diagnosis

and treatment of OSA in children (19). In patients with uncomplicated, symptomatic OSA, management by primary care physicians or pulmonologists would be expected to lead to similar symptom-related outcomes as current outcomes by sleep specialists (16, 17). The comfort level of primary care physicians and nonspecialists needs to continue to improve, with enhanced education around sleep and its disorders in medical schools and other levels of training (20).

Although evidence-based care of our patients with OSA is clearly a critical priority, another major issue is the very small pipeline for young investigators in sleep medicine. Many excellent sleep fellowship programs have closed down or remained unfilled, including pediatric sleep medicine programs focused on the critical need for development of future translational and clinical leaders in the field. The Accreditation Council for Graduate Medical Education requirements for sleep medicine fellowships encourage one clinical year of training with minimal opportunity for meaningful research. Programs that have required a second or third year of fellowship training for research purposes have been largely unsuccessful in attracting first-rate fellows with high investigative potential. To attempt to resolve these issues, a number of strategies could be considered:

1. Enhancing sleep training for medical students and residents.
2. Modifying the existing Accreditation Council for Graduate Medical Education requirements for pulmonary and critical care training to enhance sleep training. Alternative pathways have been discussed whereby pulmonary/sleep training could be obtained in 3 years or pulmonary/critical care/sleep training could be obtained in 4 years, with clear commitment to learning all three disciplines within this time frame. Such approaches would allow adequate time for meaningful research in sleep and breathing, an area in need of young investigators. The approach would require sleep-continuity clinics such that chronic management of sleep disorders could be learned in a sophisticated manner.
3. Multiinstitutional training programs, because individual institutions may not have a critical mass of funded faculty with expertise in sleep-disordered breathing. Such programs could provide remote mentoring, share expertise, encourage networking among junior members, and provide career development guidance to the trainees across multiple sites.

We have major concerns about the future of the field of sleep medicine, both from the standpoint of patient care and in the training of future sleep scientists. We believe that bringing this issue to the fore is a first step toward the generation of a productive and informed discussion. We welcome a dialogue with our colleagues to discuss constructive approaches to these important problems and to help define approaches to ensure our next generation of clinicians and scientists in sleep medicine. Where are our replacements? ■

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