More than 100 million people live with obstructive sleep apnea (OSA) worldwide, 80% of whom remain undiagnosed, according to “Sleep: A Global Perspective,” a research report produced by Philips earlier this year. Obstructive sleep apnea occurs when the upper airways are repeatedly obstructed during sleep, depriving the heart, brain and other organs of oxygen. This can, in turn, trigger and exacerbate a broad spectrum of other serious chronic conditions including high blood pressure, stroke, diabetes, depression and even increased risk of death. While the health consequences of OSA are widely known, the socioeconomic burden of OSA is less apparent and often overlooked.

When OSA goes undiagnosed and untreated, it severely diminishes the quality of life for patients of all ages. Patients who do not regularly receive proper medical care for their sleep apnea often end up needing costly emergency room visits, hospitalizations, frequent doctors’ appointments, as well as other expensive treatments for comorbidities and related conditions. Healthcare costs of children with untreated OSA are 215% higher compared to children without OSA. One of the many hidden costs of untreated OSA patients is that they are much less productive at work and in school. Patients With OSA More Likely to Have Work-Related Accidents: Many people with untreated OSA are less productive at work, call in sick more often, perform poorly in school and are more accident-prone. Patients with limited productivity and mental alertness also run the risk of losing their jobs and compromising their financial security, their own physical safety as well as the safety of others. Patients with untreated OSA are also more likely to be involved in motor vehicle collisions.

Other Overlooked Costs of Untreated OSA: OSA can take its toll not only on patients, but also their families, employers, insurance carriers, healthcare providers and other stakeholders. For example, employers’ annual healthcare costs for each employee with sleep apnea increases from $3,200 to $4,000, according to “The Price of Fatigue,” a 2011 study produced by the Harvard Medical School’s Division of Sleep Medicine and McKinsey. The same report found that employers with untreated OSA were six times more likely to miss a full day of work and five times more likely to miss a partial day. Lower Costs, Improved Care and Productivity Depend on Early Diagnosis and Treatment: The first step toward lowering costs and improving care is routine screenings for sleep disorders such as OSA, including asking patients about their sleep habits. Primary care and emergency room clinicians can play a key role in ensuring that patients living with sleep apnea are diagnosed early enough to reduce its most serious effects and prevent other chronic conditions and comorbidities from taking hold. Preventing the escalation of the disease and related chronic conditions also depends on the willingness among stakeholders, including employers, to actively promote routine screening and support multiple treatment options.

Economic & Social Costs of Sleep Apnea

CPAP decreases length of stay & complications

Researchers from Toronto Western Hospital found that CPAP reduces the perioperative AHI and hospital length of stay (LOS). When used correctly, CPAP can significantly shorten recovery. Though it’s logical that CPAP would offer benefits after surgery, Mahesh Nagappa, MD, said there’s not enough patient education in the pre-operative period. “We already know that the prevalence of obstructive sleep apnea in the general population is very high, said Nagappa. “The prevalence is not only higher in the surgical population than in the general population, but most OSA patients who come for surgery may be undiagnosed, untreated, and have many coexisting diseases.” All of these may lead to increased perioperative adverse events.” The most common complication is desaturation, however re-intubation, failed extubation, hypertension, and other cardiovascular issues are typical for many patients. When CPAP was used properly, the general hospital length of stay decreased because opioids were used more liberally.
Steps to Improving CPAP Adherence

There are numerous patient-, mask-, and pressure-related variables that can negatively affect tolerance of and ultimately adherence of CPAP. Being familiar with the most common problems will allow clinicians to identify risks for treatment non-adherence. A step-wise approach during initiation of therapy and follow-up care can help implement quick and simple interventions to foster better use of CPAP and prevent discontinuation of therapy.

**Step #1: Educate patients on the effects of untreated OSA and emphasize need for treatment.** Discuss treatment options and all patient concerns in detail. A better understanding of the adverse effects of untreated OSA and the potential benefits of CPAP therapy is perhaps the most important, but often overlooked, aspect in long-term adherence.

**Step #2: Assess the patient’s response to therapy.** Follow-up assessments are essential to identifying potential barriers to effective therapy, optimizing the therapeutic response, achieving better outcomes, and promoting adherence to CPAP.

**Step #3: Assess adherence with therapy using patient description of CPAP and objective measures of CPAP compliance.** Newer CPAP devices have integrated adherence monitoring software, which records the absolute use of CPAP, percentage of nights CPAP is used, and number of hours CPAP is used each night. The device also monitors and records mask leaks, and residual respiratory events.

**Step #4: Determine whether there are any barriers to CPAP use or effectiveness.** Factors that can negatively affect the tolerance and effectiveness of CPAP include chronic sinus congestion, insomnia, anxiety, claustrophobia, gastric distention from air swallowing, and pressure ulceration or skin breakdown that may occur. Identifying and treating these conditions can result in significant improvements in patient comfort and sleep quality. Also, education of the bed partner is often required so the patient doesn’t feel self-conscious due to the bed partner rejecting CPAP therapy.

**Step #5: Incorporate conservative measures to improve sleep quality and reduce the effects of OSA.** CPAP should be used during all sleep periods, and patients should be encouraged to obtain an adequate amount of sleep. Sleeping laterally and elevating the head of the bed can decrease the effect of gravity on the upper airway obstruction. Patients should avoid excessive use of alcohol or other sedatives. Maintaining an ideal body weight is important to improve sleep quality and can reduce sleepiness, CPAP pressure requirements, and the severity of OSA. Despite all efforts, CPAP adherence remains problematic.

Quickly identifying and resolving common barriers to CPAP use can prevent discontinuation of therapy, promote better adherence, and ensure that treatment response and outcomes are optimal.

No Masking CPAP Discomfort

People who start CPAP therapy have been given a lot of information about the mechanics of using and cleaning the equipment. One thing that needs more emphasis is how to make wearing a mask more comfortable. Suggestions include:

- **Try a different mask.** The sleep therapy industry has created products that address medical needs while dealing with thousands of variations in facial physiology, skin types, allergies, etc. A person does not have to settle for the first mask tried. CPAP masks commonly come in full face, nasal and nasal pillows. Within those categories are styles that address the placement of the straps, chin support, and pressure on the bridge of the nose.

- **Identify the cause of the discomfort.** Is the skin sore and red where the silicone cushion touches the face? Does the mask leak air causing disruptions or cause issues for the bed partner’s sleep? Are the straps so tight that they leave marks on the face well into the next day?

- **Check with a sleep professional.** Consult a sleep professional or research online for products that will help address the problems. New products come on the market all of the time. Look for products that provide a soft barrier between the silicone cushion or the straps and the skin. Focus on alleviating the skin irritations, strap marks, and air leaks.

If one mask does not give the results desired, try another one. Keep experimenting until a treatment solution works.


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