The Eye-Opening Facts about Sleep

By Carlos M. Nunez, MD, Chief Medical Officer, ResMed

The new era of healthcare is fueled by measurement. Consumers, physicians and healthcare providers are measuring every aspect of health and wellness – every waking, and every sleeping minute. The information consumers get from a personal fitness monitor may motivate them to exercise more, but the data patients and healthcare providers gather from wirelessly-connected medical devices will lead to monumental advances in healthcare.

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World Sleep Day (17 March), a global awareness day to recognize the critical work of sleep researchers, caregivers and technologists, is just around the corner. It's an opportune time to highlight the role of sleep data in healthcare. In my role as a physician and Chief Medical Officer for ResMed, I am privileged to have the opportunity to focus on the vital importance of sleep data – and how understanding more about sleep will make us healthier.

The good news about the scientific understanding of sleep is that there is more data about sleep, and more people have their sleep remotely monitored, than any other aspect of health or any other medical condition. Our company alone has data collected from more than one billion nights of sleep, wirelessly and securely streaming daily from over two million connected devices. The total number of patients monitored for sleep or any health condition is now over seven million – a 44 percent increase over the last year, according to analyst firm Berg Insight.

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Sleep impacts everyone from healthy consumers to patients managing chronic medical conditions. Insights from data on sleep that are valuable in understanding more about consumer wellness may also have a profound impact on the treatment and management of certain diseases. I'm talking about more than just hours awake or in deep sleep, but real insights that predict things like our ability to exercise effectively, function on caffeine or even understand other health conditions related to sleep. A recent survey conducted by SleepScore Labs and presented by Dr. Mehmet Oz revealed data that shows how much exercise improves sleep: 30 minutes of activity correlates to 14 minutes of extra sleep per night. It also identified the magic number of cups of coffee before the caffeine starts negatively impacting our sleep: Three!

While this information is helpful for contemplating your afternoon coffee, for people with sleep apnea, COPD or other chronic diseases, access to sleep data can be a life or death imperative. Given the global magnitude of these diseases – The World Health Organization estimates 100 million people globally suffer from sleep apnea and COPD is the third leading cause of death globally – access to sleep data can have a profound impact on healthcare economics.

Continuous Positive Airway Pressure, commonly referred to as "CPAP" and considered the gold standard for treating sleep apnea, requires patients to sleep while wearing a mask that delivers air pressure to assist with breathing. As you might imagine, comfort (both physical and emotional) while sleeping and wearing a mask can be a barrier to therapy. If they're uncomfortable and therefore not wearing the mask for the appropriate amount of time to maximize therapeutic benefit, they're at risk. Data that is collected wirelessly from a patient's device helps them understand what might be causing discomfort and helps them get the most comfortable and effective therapy. Meanwhile, their physicians or providers also have access to this data, so they too can understand exactly what's going on with the patient's therapy. This data, about a patient's time on treatment, or about a mask fitting issue, enables them to troubleshoot remotely to help improve the patient's therapy and ultimately, their quality of life.

We've also seen how feedback from the CPAP device, delivered in a digital environment, significantly helps patients help themselves: A study of 128,000 sleep apnea patients found that those with access to digital engagement tools, including tools for better understanding of their own sleep data, demonstrated improved adherence to therapy over a three-month period.

Because sleep apnea is prevalent in so many other medical conditions (76% of people with congestive heart failure, 72% of people with type II diabetes and 70% of people with stroke/TIA also have sleep apnea) it's valuable to learn how treating sleep disorders can impact health in other ways. For example, by recognizing, treating, collecting and analyzing data about sleep apnea in COPD patients, we know associated hospital readmission rates can be reduced. These hospital readmissions are a key driver of today's exorbitant healthcare

costs, and now we have data that shows how treating sleep apnea can reduce this burden.

Sleep data is an exciting space because it impacts everyone, and as the volume of data keeps growing, it will continue to provide useful insights. At the end of the day, we can all sleep a little easier knowing that sleep data scientists are paving the way to perhaps the most important and far-reaching work in healthcare research.

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