



PHILIPS

Innovation

DreamMapper

Engaging sleep apnea patients in their own care

An app that coaches and motivates patients to improve adherence

Need

About 10% of the world's adult population suffers from sleep apnea, in which the airway is repeatedly blocked.¹ Untreated, it can cause serious health risks, putting a strain on health systems. Treatment with positive airway pressure (PAP) therapy is effective, but adherence is poor.

Solution

The DreamMapper app helps motivate people living with sleep apnea to improve their adherence to treatment by providing tools and real-time tracking and analysis of their PAP therapy from Philips devices.

Benefits

- **Personalized coaching for patients:** the app motivates patients via algorithms derived from psychological theories of behavior change.³
- **Helps save time for clinicians:** By giving patients greater insight into their therapy data and giving them tools like the ability to troubleshoot issues to common problems, DreamMapper can reduce the time clinicians spend answering common questions, giving them more time to those patients who may need extra attention.

Obstructive Sleep Apnea, or OSA, is a serious medical condition with significant health consequences. Many patients rely on sleep therapy, such as a positive airway pressure (PAP) device that sends a constant flow of airway pressure to the throat to keep the airway open during sleep.

DreamMapper, which is the world's most downloaded PAP therapy engagement mobile app², is designed to encourage OSA patients to take an active role in their therapy by tracking adherence and results. The app analyzes therapy use, mask fit, and apnea hypopnea index (AHI) readings (the number of pauses in breathing per hour of sleep) to enable users to set and achieve personal goals. Clinicians can access data through the Philips EncoreAnywhere web-based system to manage patient compliance and therapy.

58%

more people used their therapy every night when they used DreamMapper⁴





Sleep apnea can affect anyone, regardless of age and body weight



Untreated OSA can cause: high blood pressure, heart disease and 3x greater risk of stroke⁵



Up to 25% of traffic accidents on European roads are the result of sleepiness at the wheel⁷

Connected care in action

OSA is a serious condition where the muscles in the throat relax during sleep causing the sufferer to temporarily stop breathing. If untreated, it can occur hundreds of times in a night leading to daytime fatigue and other serious health problems. Once diagnosed, OSA can be easily treated through lifestyle changes and the use of therapy such as a PAP device.

To be maximally effective, PAP therapy must be used nightly. In the US, reimbursement for PAP therapy can be denied if a patient does not demonstrate adequate adherence to treatment, which is defined⁶ as the use of therapy on at least 70% of nights, for at least 4 hours each night, over a consecutive 30-day period in the first 90 days of treatment.

DreamMapper – as part of the Dream Family, which includes the DreamWear minimal contact nasal mask – helps to motivate people to take an active role in their treatment via algorithms derived from psychological theories of behavior change.

For example, if the patient starts to struggle with their therapy by dropping below two hours of use each day for several days, then the app will attempt to work out why by asking questions which reflect the patient's own words. This could be something simple such as, "we notice you're having issues with mask fit", together with a suggestion to watch a video on how to fit their mask correctly.

If the app notices that the patient needs more emotional motivation, then it might suggest that the user holds their breath for 10 seconds to see how they feel afterwards. Most sleep apnea patients have not seen themselves or anyone else go through an apnea episode, so sometimes simply showing the patient a video of an apnea episode can motivate them to improve their treatment.

Patients who use DreamMapper can choose to send their data via a secure cloud to the Philips EncoreAnywhere web-based system. This population health management tool enables care providers to manage patient compliance and therapy, spot usage patterns, and take action if and when needed.

One study has demonstrated that 58% more people used their therapy every night when they used DreamMapper⁴, and demonstrated a 283% higher success rate for users struggling with adherence to sleep therapy⁸.

These results demonstrate connected care in action: the interoperability of Dream Family solutions and health data equips both patients and clinicians with the insights and tools they need to enable better outcomes and better experiences of care across the care continuum.

Studies have demonstrated a **283%** higher success rate for DreamMapper users struggling with adherence to sleep therapy⁸



Learn more
<http://www.dreammapper.com/>

1. Young T, et al. Epidemiology of obstructive sleep apnea: a population health perspective. *AJRCCM* 2002;165:1217-1239.
2. April 2018 review of Apple App Store®, Google Play™ store and App Annie™
3. Aloia MS; Arnedt JT; Strand M; Millman RP; Borrelli B. Motivational enhancement to improve adherence to positive airway pressure in patients with obstructive sleep apnea: a randomized controlled trial. *SLEEP* 2013;36(11):1655-1662.
4. 19% of DreamMapper users used their therapy 100% of the nights over 90-days versus 12% for the Standard Care users, a 58.33% increase. In a retrospective review conducted by Philips Respirationics of the EncoreAnywhere database (white paper: https://www.philips.de/c-dam/corporate/newscenter/de/press-releases/health_systems/20161201_philips_respirationics_dgsm_jahrestagung/Philips_Respirationics_DreamMapper_WhitePaper.pdf) that compared DreamMapper patients (n=85,077) to users who did not use it (n=87,602). Requirements. Centers for Medicare & Medicaid Services; October 2016.
5. Goldstein et al. Guidelines for the Primary Prevention of Stroke. A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. *Stroke*, Dec 5, 2010.
6. Positive Airway Pressure (PAP) Devices: Complying with Documentation & Coverage Requirements. Centers for Medicare & Medicaid Services; October 2016.
7. Sleepiness at the wheel - White Paper, Institut National du Sommeil et de la Vigilance & Association des sociétés françaises d'autoroutes, June 2013
8. 46% 90-day adherence rate for DreamMapper patients versus 12% for the Standard Care group, a 283.33% increase. In a retrospective review conducted by Philips Respirationics of the EncoreAnywhere database (white paper: see source 4 for link) of struggling patients (n=24,378).

