

SleepMapper Self-Management System Discussion Paper

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Disease management and compliance to therapy

Patient compliance to treatment is an essential component of positive health outcomes. Support by patient communities can help patients better understand their conditions, overcome their resistance to treatments and encourage them to live healthier lives.

Compliance describes the degree to which a patient correctly follows medical advice. Most commonly, it refers to medication or drug compliance, but it can also refer to the use of medical appliances, advice on lifestyle management, and attending counseling or other courses of therapy. Studies on non-adherence indicate that up to 90%¹ of patients do not follow their physician's orders and that 33 – 50% of those with a chronic illness do not take their prescribed medications. If a lifestyle change is required the compliance rate decreases even lower to only 20 – 30%.²

Non-compliance to long-term therapies severely compromises treatment outcomes and has direct clinical consequences such as treatment failure. This becomes a critical issue in healthcare both from the perspective of quality of life and health economics that cause an increased financial burden on society.² The annual healthcare costs in the US of \$70 billion arise from an increased demand for healthcare, including unnecessary hospital admissions.³

Patient compliance technologies

Technology and the digital age are changing the way we live, communicate and conduct business.

- 70% of Americans play online computer or video games
- 33% of Americans use social media and online sites to research health issues

- 40% of physicians believe that mobile health technologies can reduce the number of office visits
- 88% of physicians support patients monitoring their own health at home
- 74% of physicians already own a smartphone device
- 27% of internet users have tracked their weight, diet or fitness behaviors online^{3,4}

Patients are becoming more involved and are better able to manage their health in real time with the use of technology. Physicians are able to have more effective communication with their patients using digital technologies for:

- Reminding patients to go for tests
- Reminding patients of appointments
- Collecting patient data from home care and transmitting them to the clinician's smartphone device³

Social media for compliance

Since 2002, the number of people researching health information on the Internet, specifically social networks, has doubled. About 36% of social network users value other consumers' knowledge prior to making their own healthcare decisions. Internet-based social networks can enable communication, collaborations and maintain the flow of information in the healthcare space. Various studies have shown that providing social support can increase patients' compliance to their therapies, as the patient communities provide a safe environment to offer support and encouragement, education and the will to fight and cope with their diseases.³

PAP therapy and compliance

PAP (positive airway pressure) therapy is considered the gold standard for treatment of obstructive sleep apnea (OSA), since it is the most commonly prescribed therapy. However, compliance to therapy remains a challenge. Current studies demonstrate a nonadherence rate that has not changed significantly since Kribbs noted a rate of 54% when using PAP therapy for greater than 4 hours/night in 1997.⁵ Two of the main hindrances to CPAP compliance are poor patient education and understanding of the disease management process. Supportive interventions have been shown to enhance the use of CPAP (continuous positive airway pressure) by an average of 0.59 hours/night.⁶

Compliance to therapy has become very important to both the patient and the provider. Both Medicare and private payers have developed guidelines that emphasize better compliance for continued reimbursement coverage of the PAP device based on nightly usage of the device within the first 90 days.⁷

Mobile applications for CPAP compliance

Many mobile applications for patients are centered on disease management; medication tracking, drug recalls, health cost and record management are becoming a lifestyle choice. The power of mobile apps to increase compliance lies not just in the ability to act as a reminder tool to take medicine, but also to increase communication and education, as well as, tracking and monitoring device usage.

Donepudi et al designed a program that included touch point care and advanced monitoring technologies that reported an 88.5% compliance rate using Medicare criteria in a sample size of 626 patients. They concluded that engaging patients in their own disease management process and utilizing the newest technologies to monitor therapy greatly improved CPAP adherence.⁸

SleepMapper self-management system for compliance

As Donepudi stated, the CPAP user in the management of his or her OSA, can lead to an increase in the use of the device and therefore better compliance. New technologies, like the SleepMapper Self-Management System by Philips

Respironics will provide value to new patients by reinforcing their usage with feedback on how they are doing, developing goals to strive towards, and providing answers to the many questions that come up within the first months of therapy.

SleepMapper offers coaching for those who are struggling to adapt to using CPAP therapy. Some of Dr. Mark Aloia's clinically proven motivational enhancement therapy (MET) methods are included within SleepMapper. They provide self-management techniques, that encourage patients to think about the benefits and barriers to behavior change with their CPAP usage.⁹

Finally, patients that are adhering to their CPAP therapy still require positive reinforcement and a support community to assist in maintaining their compliance. Also maintaining compliance also can be dependent on having reminders to obtain the new supplies at the proper intervals.

As PAP users become more mobile, their tools to assist in successful OSA treatment need to be able to adjust to their lifestyles and mobility. SleepMapper has the capability to be utilized via a mobile or Internet-based application to provide support to both non-compliant and compliant OSA sufferers in an effort to manage their condition.

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