



Coverage Decisions for Positive Airway Pressure Therapy: Intended and Unintended Consequences

Kevin I. Duan, M.D., M.S.^{1,2} and Lucas M. Donovan, M.D., M.S.^{1,2}

¹University of Washington, Seattle, Washington and ²Health Services Research and Development, Veterans Affairs Puget Sound, Seattle, Washington

ORCID ID: 0000-0001-8187-2641 (L.M.D.).



Healthcare payers, including private insurers and government agencies, are tasked with funding health services across large populations using finite resources. Managing the competing demands that arise requires specific decisions about what services will and will not be covered. In turn, these coverage decisions create incentives and choice structures that drive patient and clinician behaviors (1). One of the most well-known examples of such behaviors occurred in the RAND Health Insurance Experiment. In that study, patients were randomized to insurance coverage with differing copay amounts. Across 7,706 participants, RAND found that higher out-of-pocket costs led to lower healthcare utilization (1). Although RAND's results provide a general framework of how patients respond to coverage decisions, to optimize health services, we must consider the consequences of coverage decisions within specific conditions and disease states.

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One condition that is representative of the challenges payers face is obstructive sleep apnea (OSA). Up to 425 million individuals worldwide have moderate to severe OSA, and high-quality evidence demonstrates that treatment with continuous positive airway pressure (CPAP) reduces sleepiness, improves sleep-related quality of life, and reduces blood pressure (2, 3). Although the per-patient costs of CPAP are relatively modest (4), the total costs can be substantial given the large population health burden of OSA. In the setting of scarce resources, payers have made a variety of decisions to manage their CPAP expenditures. For instance, some payers decline to cover CPAP at all, choosing instead to prioritize the management of other conditions. Such decisions force patients to either forgo therapy altogether or obtain CPAP through secondary health insurance or private payments (5). Other payers will cover CPAP but apply constraints to limit coverage. For instance, despite evidence of comparable outcomes after home sleep apnea testing in numerous randomized trials (3, 6), some payers require that all patients be diagnosed through “gold-standard” in-laboratory polysomnograms that are inconvenient and inaccessible for many patients (7–10). Payers also frequently require that patients meet prespecified CPAP adherence cutoffs (4), even though some patients may experience meaningful symptom reductions with suboptimal adherence (11). With each coverage decision, payers apply a set of parameters to limit coverage to a certain population, thereby containing expenditures within their available resources.

Although payers' decisions may seem appropriate during internal deliberations, each decision will have intended and unintended consequences that affect healthcare utilization, equity, and outcomes. Too often, though, the effect of coverage decisions on the population remains unknown. The work by Chiu and colleagues

(pp. 110–117) in this issue of *AnnalsATS* takes a step toward closing that knowledge gap in OSA by studying the impact of CPAP coverage decisions across Canadian jurisdictions (5). Much like the differences in Medicaid-covered services among states in the United States, the Canadian single-payer healthcare system is operationalized at the provincial level, leading to differences in coverage among provincial and territorial jurisdictions (5). The authors leverage differing CPAP coverage policies across jurisdictions to evaluate important health system outcomes, such as self-reported wait times, utilization, and cost. The authors identified patients with diagnoses of OSA in jurisdictions that provide public funding for CPAP (i.e., the provinces of Manitoba, Ontario, and Saskatchewan), relative to patients in jurisdictions that do not fund CPAP. The authors surveyed patients concerning their demographics, wait times for testing, wait times for treatment, costs, and preferences. Overall, the authors collected survey responses from 181 patients in jurisdictions that cover CPAP and 419 patients in jurisdictions that do not cover CPAP. Within their sample, the authors found comparable wait times for testing and treatment between groups and similar overall patient-reported costs. However, patients in jurisdictions with CPAP funding were less likely to report that cost was a factor in treatment decision making (16% vs. 23%) and more likely to report that they were presented with limited treatment options (17% vs. 11%). Finally, the authors identified the consequences of CPAP coverage policies on diagnostic care, as patients in jurisdictions with no CPAP coverage were more likely to be diagnosed using home testing (69% vs. 20%). This analysis demonstrates that costs are just one aspect of the holistic care provided to patients. Coverage decisions can also shape other important factors, such as the perception of choice and how patients access care. Finally, the authors also demonstrate an important

example of “team science,” as they effectively leveraged the insights of a nationwide group of investigators to better understand the implications of local policies.

Although this work provides much needed insights, there are some limitations worth noting. First, Canadian jurisdictions differ in multiple ways beyond the decision to cover CPAP. Although the authors attempted to account for differences, such as rurality and availability of subspecialists, residual confounding may have influenced comparisons between jurisdictions. In addition, we must consider limitations related to sampling. The authors selected individuals who had self-reported diagnoses of OSA. However, this population may not reflect the true population affected by coverage policies. For instance, patients who are unable to afford CPAP may decline to pursue testing if they know that CPAP will

not be covered and therefore never receive formal diagnoses of OSA. Similarly, providers caring for patients with limited means may not ask about OSA symptoms or advise testing because they believe that treatment of OSA, if diagnosed, would be out of reach. The exclusion of such patients could have led the authors to underestimate differences between groups regarding the influence of costs on care decisions.

The work by Chiu and colleagues (5) begs the question: what is the right coverage policy for CPAP? Ideally, coverage decisions should be designed such that they incentivize patients and clinicians to pursue diagnostic and management approaches that are evidence based and patient centered. This is easier said than done. One possible approach is to focus on enhancing value. Rather than limiting care on the basis of patients’ ability

to pay or their ability to spend the night in a sleep laboratory, we might consider prioritizing coverage on the basis of patients’ likelihood of benefiting from therapy. For instance, we might consider prioritizing CPAP coverage among those with excessive daytime sleepiness, the indication with the strongest evidence of benefit from CPAP (3).

Although coverage decisions ultimately rest in the hands of payers, they should ideally be based on the value health services provide to society. More work is needed to understand the impact of coverage decisions on population health outcomes. Carefully evaluating the interplay of policy, behavior, equity, and outcomes will provide payers with the best evidence to optimize population health. ■

Author disclosures are available with the text of this article at www.atsjournals.org.

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