Continuous Positive Airway Pressure (CPAP)

Data Specification Version 1.0

This specification is for payer analytic teams conducting a population cost study comparing adherent and non-adherent OSA patients. This document defines the study population, inclusion and exclusion criteria, codes required to capture all costs associated with OSA diagnoses and CPAP use.

OSA patients who are non-adherent to CPAP therapy carry materially higher rates of cardiovascular events, emergency department utilization, inpatient admissions, and comorbidity-related spending.

The resulting data pull allows for comparison of expenditures between two groups of patients with obstructive sleep apnea (OSA): confirmed device new starts that were adherent to CPAP therapy (intervention group) and those were not adherent to CPAP therapy (control group). The goal is to build a cost-of-healthcare (COHC) narrative as a data-supported case that demonstrates the financial impact of adherence on OSA-related medical and pharmacy spend. This evidence base is the foundation of a value-based program conversation between a payer and CPAP provider.

Definitions and measurement parameters

Parameter	Definition
Study Type	Retrospective cohort study using paid claims data
Population	Insured members with confirmed OSA diagnosis and paid CPAP device claim
Adherence	≥4 hours/night on ≥70% of nights in a 30-day period (standard Medicare definition)
Measurement Window	12 months with a minimum 3-month runout
Index Date	Date of initial paid CPAP device claim
Prior Enrollment	Minimum 3 months continuous enrollment prior to index date

Inclusion Criteria

Criterion	Definition/Rationale
OSA Diagnosis	At least one paid medical claim with a qualifying OSA ICD-10 diagnosis code
CPAP Paid Device Claim	At least one paid HCPCS claim for a CPAP device or qualifying supply during the study window (POS 12)
Continuous Enrollment	No gap in eligibility/coverage during the measurement period

Exclusion Criteria

Criterion	Definition/Rationale
Prior Device Claims	No CPAP device claims within the preceeding 6 months of the Index Date
Pediatric members (age <18)	OSA adherence benchmarks and cost patterns differ materially in pediatric populations
Denied claims only	Members whose NPWT claims were entirely denied are not confirmed device recipients

Diagnosis, procedure, and device codes

OSA Diagnosis Codes — ICD-10-CM

ICD-10 Code	Description
G47.30	Sleep apnea, unspecified
G47.31	Primary central sleep apnea
G47.33	Obstructive sleep apnea (adult/pediatric)

ICD-10 Code	Description
G47.310	Primary central sleep apnea, unspecified
G47.319	Primary central sleep apnea, other
G47.330	OSA, adult, unspecified
G47.339	OSA, other and unspecified

Sleep Study Confirmation — CPT

CPT Code	Description
95806	Sleep study, unattended, minimum 6 channels
95807	Sleep study, attended, minimum 6 channels
95808	Polysomnography, 1–3 additional parameters
95810	Polysomnography, 4+ additional parameters
95811	Polysomnography with CPAP titration

CPAP Device & Supply Codes — HCPCS

HCPCS Code	Description
E0601	Continuous positive airway pressure (CPAP) device
E0562	Heated humidifier for use with positive airway pressure device
A7030	Full face mask used with positive airway pressure device
A7031	Face mask interface, replacement for full face mask
A7032	Cushion for use on nasal mask interface
A7033	Pillow for use on nasal cannula type interface
A7034	Nasal interface (mask or cannula type)
A7035	Headgear used with positive airway pressure device
A7036	Chinstrap used with positive airway pressure device
A7037	Tubing used with positive airway pressure device
A7038	Filter, disposable, used with positive airway pressure device
A7039	Filter, non-disposable, used with positive airway pressure device

Comorbidity Flags - ICD-10-CM

Condition	ICD-10 Codes	Clinical relevance
Hypertension	I10	OSA is a leading secondary cause of hypertension; adherence reduces BP
Atrial Fibrillation	I48.0, I48.11, I48.19, I48.20, I48.21	Non-adherent OSA patients have significantly higher AFib event rates
Congestive Heart Failure	I50.1, I50.20–I50.23, I50.30–I50.33, I50.9	Untreated OSA accelerates CHF progression; high inpatient cost driver
Stroke / Cerebrovascular	I60.X–I69.X	Non-adherent OSA patients carry elevated stroke risk; high cost event
Type 2 diabetes	E11.0–E11.9	OSA worsens glycemic control; adherence associated with A1C improvement