Home Oxygen Equipment and Supplies

MEDICAL POLICY NUMBER: 88

Effective Date: 7/1/2024

Last Review Date: 4/2024

Next Annual Review: 4/2025

INSTRUCTIONS FOR USE: Company Medical Policies serve as guidance for the administration of plan benefits. Medical policies do not constitute medical advice nor a guarantee of coverage. Company Medical Policies are reviewed annually and are based upon published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last policy update. The Company reserves the right to determine the application of medical policies and make revisions to medical policies at any time. The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and Company Medical Policy will be resolved in favor of the coverage agreement. Coverage decisions are made on the basis of individualized determinations of medical necessity and the experimental or investigational character of the treatment in the individual case. In cases where medical necessity is not established by policy for specific treatment modalities, evidence not previously considered regarding the efficacy of the modality that is presented shall be given consideration to determine if the policy represents current standards of care.

SCOPE: Providence Health Plan, Providence Health Assurance, and Providence Plan Partners as applicable (referred to individually as “Company” and collectively as “Companies”).

PLAN PRODUCT AND BENEFIT APPLICATION

☒ **Commercial** ☒ **Medicaid/OHP*** ☐ **Medicare****

*Medicaid/OHP Members

Oregon: Services requested for Oregon Health Plan (OHP) members follow the OHP Prioritized List and Oregon Administrative Rules (OARs) as the primary resource for coverage determinations. Medical policy criteria below may be applied when there are no criteria available in the OARs and the OHP Prioritized List.

**Medicare Members

This *Company* policy may be applied to Medicare Plan members only when directed by a separate *Medicare* policy. Note that investigational services are considered **"not medically necessary"** for Medicare members.

COVERAGE CRITERIA

Note: This policy does not address home oxygen therapy and oxygen equipment in patients under 18 years of age.

Home Oxygen Therapy for Lung Disease or Hypoxia

I. Home oxygen therapy and oxygen equipment for severe lung disease or hypoxia-related symptoms may be considered **medically necessary** if the following conditions are met (A.-E.):

   A. The treating practitioner has determined that the member has a severe lung disease or hypoxia-related symptoms that might be expected to improve with oxygen therapy; **and**
   B. The member meets the standards of a qualified blood gas study (for definition of qualifying blood gas study, see the Policy Guidelines section), measured through either an oximetry test or an arterial blood gas test; **and**
   C. The qualifying blood gas test was performed by a treating practitioner or by a qualified provider or supplier of laboratory services; **and**
   D. The qualifying blood gas study was obtained under the following conditions:
      1. If the qualifying blood gas study is performed during an inpatient hospital stay, the reported test must be the one obtained closest to, but no earlier than 2 days prior to the hospital discharge date, **or**
      2. If the qualifying blood gas study is not performed during an inpatient hospital stay, the reported test must be performed while the beneficiary is in a chronic stable state – i.e., not during a period of acute illness or an exacerbation of their underlying disease, **and**
   E. Alternative treatment measures have been tried or considered and deemed clinically ineffective.

II. Home oxygen therapy and oxygen equipment for severe lung disease or hypoxia-related symptoms is considered **not medically necessary** when criterion I above is not met.

Portable Oxygen Systems

III. A portable oxygen system may be considered **medically necessary** if the member is mobile within the home and the qualifying blood gas study was performed while at rest (awake) or during exercise.
IV. Portable oxygen is considered **not medically necessary** If the only qualifying blood gas study was performed during sleep.

NON-COVERAGE CRITERIA

V. **Group III** includes members with arterial PO_2 levels at or above 60 mm Hg or arterial blood oxygen saturations at or above 90 percent. For these members there is a rebuttable presumption of **non-coverage**.

VI. If the coverage conditions specified above are not met, the oxygen therapy will be **denied as not reasonable and necessary**. Oxygen therapy will also be denied as **not reasonable and necessary** if any of the following conditions are present (A.-D.):

A. Angina pectoris in the absence of hypoxemia. This condition is generally not the result of a low oxygen level in the blood and there are other preferred treatments.
B. Dyspnea without cor pulmonale or evidence of hypoxemia
C. Severe peripheral vascular disease resulting in clinically evident desaturation in one or more extremities but in the absence of systemic hypoxemia. There is no evidence that increased PO_2 will improve the oxygenation of tissues with impaired circulation.
D. Terminal illnesses that do not affect the respiratory system

VII. Emergency or stand-by oxygen systems for members who are not regularly using oxygen are considered **not medically necessary and are not covered** since they are precautionary and not therapeutic in nature.

VIII. Topical hyperbaric oxygen chambers (A4575) are considered **not medically necessary.**

IX. Topical oxygen delivery systems (E0446) are considered **not medically necessary.**

Home Oxygen for Cluster Headaches

X. Home oxygen therapy for cluster headaches may be considered **medically necessary** when **all** of the following criteria (A.-C.) are met:
A. Neurologist has evaluated patient and confirmed the diagnosis of cluster headache; **and**
B. Neurologist has prescribed oxygen in conjunction with both an acute and preventative medical treatment plan; **and**
C. The cluster headaches must be accompanied by **at least one** of the following findings:
1. Ipsilateral conjunctival injection and/or lacrimation; **or**

2. Ipsilateral nasal congestion and/or rhinorrhea; **or**
3. Ipsilateral eyelid edema; **or**
4. Ipsilateral forehead and facial sweating; **or**
5. Ipsilateral miosis and/or ptosis; **or**
6. A sense of restlessness or agitation

XI. Home oxygen therapy is considered **not medically necessary** as a treatment of cluster headaches when criterion I. above is not met.

POLICY CROSS REFERENCES

None

The full Company portfolio of current Medical Policies is available online and can be accessed here.

POLICY GUIDELINES

BACKGROUND

This policy may be primarily based on the following Center for Medicare and Medicaid Services (CMS) guidance resources:

- National Coverage Determination (NCD) 240.2: Home Use of Oxygen[1]
- Local Coverage Determination (LCD) L33797: Oxygen and Oxygen Equipment[2]
- Local Coverage Article (LCA) A52514: Oxygen and Oxygen Equipment[3]

Standards for qualifying blood gas study:

A qualifying blood bag study can be defined in two ways, through Group I or Group II criteria:

Group I criteria include any of the following:

- An arterial PO2 at or below 55 mm Hg or an arterial oxygen saturation at or below 88 percent taken at rest (awake), or
- An arterial PO2 at or below 55 mm Hg, or an arterial oxygen saturation at or below 88 percent, for at least 5 minutes taken during sleep for a beneficiary who demonstrates an arterial PO2 at or above 56 mm Hg or an arterial oxygen saturation at or above 89 percent while awake, or
- A decrease in arterial PO2 more than 10 mm Hg, or a decrease in arterial oxygen saturation more than 5 percent from baseline saturation, for at least 5 minutes taken during sleep associated with symptoms (e.g., impairment of cognitive processes and [nocturnal restlessness or insomnia]) or signs (e.g., cor pulmonale, "P" pulmonale on EKG, documented pulmonary hypertension and erythrocytosis) reasonably attributable to hypoxemia, or

- An arterial PO2 at or below 55 mm Hg or an arterial oxygen saturation at or below 88 percent, taken during exercise for a beneficiary who demonstrates an arterial PO2 at or above 56 mm Hg or an arterial oxygen saturation at or above 89 percent during the day while at rest. In this case, oxygen is provided for during exercise if it is documented that the use of oxygen improves the hypoxemia that was demonstrated during exercise when the beneficiary was breathing room air.

Initial coverage for beneficiaries meeting Group I criteria is limited to 12 months or the treating practitioner-specified length of need, whichever is shorter.

Group II criteria include the presence of:

- An arterial PO2 of 56-59 mm Hg or an arterial blood oxygen saturation of 89 percent at rest (awake), during sleep for at least 5 minutes, or during exercise (as described under Group I criteria), and any of the following:
    - Dependent edema suggesting congestive heart failure, or
    - Pulmonary hypertension or cor pulmonale, determined by measurement of pulmonary artery pressure, gated blood pool scan, echocardiogram, or "P" pulmonale on EKG (P wave greater than 3 mm in standard leads II, III, or AVF), or
    - Erythrocythemia with a hematocrit greater than 56 percent.

Initial coverage for beneficiaries meeting Group II criteria is limited to 3 months or the treating practitioner specified length of need, whichever is shorter.

CLINICAL EVIDENCE AND LITERATURE REVIEW

EVIDENCE REVIEW

A review of the ECRI, Hayes, Cochrane, and PubMed databases was conducted regarding the use of oxygen therapy as a treatment for cluster headaches. Below is a summary of the available evidence identified through March 2024.

Systematic Reviews

No recent systematic reviews were identified.

Nonrandomized Studies

In 2017, Petersen and colleagues conducted a single-blinded, placebo-controlled crossover study that sought to evaluate pain at 15-minute follow up among 57 cluster head patients receiving either demand valve oxygen (DVO), O2ptimask, simple mask or placebo delivered by DVO.[4] Among the 57 patients, only 10 had multiple CH attacks and reached the point of placebo. No significant differences between masks were reported in the primary end-point of a 2-point decrease of pain on a 5-point rating scale. After 15 minutes 48% had a two-point decrease using the DVO compared to 45% with placebo (p = 0.867). After 30 minutes 68% were pain free or had pain relief using DVO and 45% by placebo (p = 0.061).

CLINICAL PRACTICE GUIDELINES

American Headache Society

In 2020, the American Headache Society published an evidence-based clinical practice guideline addressing the treatment of cluster headaches.[5] Authors listed high flow oxygen as a Level A recommended treatment (i.e. established as effective) for both episodic and chronic cluster headaches.

Institute for Clinical Systems Improvement (ICSI)

In 2019, ICSI published evidence-based clinical practice guidelines regarding the diagnosis and treatment of headaches.[6] ICSI made the following recommendations regarding the classification and treatment of cluster Headaches:

> Cluster Headache Algorithm Annotations
>
> There is no more severe pain than that sustained by a cluster headache sufferer. This headache is often termed "suicide headache." Cluster headache is characterized by repeated short-lasting but excruciating intense attacks of strictly unilateral peri-orbital pain associated with local autonomic symptoms or signs. The most striking feature of cluster headache is the unmistakable circadian and circannual periodicity. Many patients typically suffer daily (or nightly) from one or more attacks over a period of weeks or months.
>
> *Acute Treatment Recommendations*
>
> - Clinicians should utilize inhaled oxygen for the treatment of cluster headaches at a rate of 7-15 L/min.
> - Clinicians should consider using subcutaneous sumatriptan or intranasal zolmitriptan as a first line option for the treatment of cluster headaches.
>
> Oxygen inhalation is highly effective when delivered at the beginning of an attack with a non-rebreathing facial mask (7-15 L/min). Most patients will obtain relief within 15 minutes. Acute drugs may be difficult to obtain in adequate quantity.

National Institute for Health and Clinical Excellence (NICE)

The 2021 NICE guidelines regarding the diagnosis and management of headaches in young people and adults issued the following practice guidelines regarding the use of oxygen therapy as a treatment of cluster headaches:[7]

> *Acute Treatment*
>
> - Offer oxygen and/or a subcutaneous or nasal triptan for the acute treatment of cluster headache.
>
> When using oxygen for the acute treatment of cluster headache:
>
> - Use 100% oxygen at a flow rate of at least 12 litres per minute with a non-rebreathing mask and a reservoir bag; and
> - Arrange provision of home and ambulatory oxygen.

POLICY SUMMARY

Despite a lack of recent clinical evidence suggesting efficacy, oxygen therapy is supported by 3 prominent clinical practice organizations for the treatment of chronic and episodic cluster headaches.

BILLING GUIDELINES AND CODING

A maximum of 3 months of oxygen may be delivered at any one time.

Initial 36 Months

Reimbursement for oxygen equipment is limited to 36 monthly rental payments. Payment for accessories (e.g., cannula, tubing, etc.), delivery, back-up equipment, maintenance, and repairs is included in the rental allowance. Payment for oxygen contents (stationary and/or portable) is included in the allowance for stationary equipment (E0424, E0439, E1390, E1391).
If the member was using portable gaseous or liquid equipment during the 36th rental month of stationary equipment (gaseous, liquid, or concentrator), payment for portable contents begins when the rental period for the stationary equipment ends. If the member began using portable gaseous or liquid equipment after starting on stationary equipment, payment for the portable equipment would continue until the end of the 36-month rental period for that equipment even though payment was also being made for the portable contents.

If the member is using only portable gaseous or liquid equipment and not stationary equipment during months 1 through 36 of the portable equipment rental, payment for portable contents begins when the rental period for the portable equipment begins. If stationary equipment is subsequently added, separate payment for portable contents ends because payment for contents is included in the payment for stationary equipment.

If the member was not using gaseous or liquid equipment (stationary or portable) in the 36th month, but was subsequently switched to gaseous or liquid oxygen based on a physician order, contents may be paid.

If the member has a stationary concentrator, portable liquid equipment, and a stationary liquid tank to fill the portable cylinders, when payment for contents begins, payment will only be made for portable liquid contents.

Payment for stationary equipment is increased for beneficiaries requiring greater than 4 liters per minute (LPM) of oxygen flow and decreased for beneficiaries requiring less than 1 LPM. If a beneficiary qualifies for additional payment for greater than 4 LPM of oxygen and also meets the requirements for portable oxygen, payment will be made for the stationary system at the higher allowance, but not for the portable system. In this situation, if both a stationary system and a portable system are billed for the same rental month, the portable oxygen system will be denied as not separately payable.

The supplier who provides oxygen equipment for the first month must continue to provide any necessary oxygen equipment and all related items and services through the 36-month rental period, unless one of the following exceptions is met:

- Beneficiary relocates temporarily or permanently outside of the supplier's service area
- Beneficiary elects to obtain oxygen from a different supplier
- Individual case exceptions made by CMS or DME MAC
- Item becomes subject to competitive bidding

Providing different oxygen equipment/modalities (e.g., concentrator [stationary or portable], gaseous, liquid, trans-filling equipment) is not permitted unless one of the following requirements is met:

- Supplier replaces the equipment with the same or equivalent item
- Physician orders different equipment
- Beneficiary chooses to receive an upgrade and signs an Advance Beneficiary Notice of Non-coverage (ABN)
- CMS or the DME MAC determines that a change in equipment is warranted

A new 36-month rental period can begin only in the following situations:

- Specific incident of damage beyond repair (e.g., dropped and broken, fire, flood, etc.) or the item is stolen or lost
- Break-in-need for at least 60 days plus the days remaining in the month of discontinuation and new medical necessity is established (see "BREAK-IN-SERVICE" below)

A new 36-month rental period does not start in the following situations:

- Replacing equipment due to malfunction, wear and tear, routine maintenance, repair
- Providing different equipment based on a physician order or beneficiary request for an upgrade
- Break-in-need less than 60 days plus the days remaining in the month of discontinuation (see "BREAK-IN-SERVICE" below)
- Break-in-billing (see "BREAK-IN-SERVICE" below)
- Changing suppliers

Months 37-60

There is no further payment for oxygen equipment during the 5-year reasonable useful lifetime (RUL) of the equipment after 36 rental payments have been made. If use of portable equipment (E0431, E0433, E0434, E1392, K0738) begins after the use of stationary equipment begins, payment for the portable equipment can continue after payment for the stationary equipment ends until 36 rental payments have been made for the portable equipment.

For information on payment for contents and maintenance, see separate sections below.

The supplier who provided the equipment during the 36th rental month is required to continue to provide the equipment, accessories, contents (if applicable), maintenance, and repair of the oxygen equipment during the 5 year reasonable useful lifetime of the equipment.

Rules for providing different equipment/modalities are the same in months 37-60 as they are in the initial 36 months (see above).

A new 36-month rental period can begin only in the following situation:

- There is a specific incident of damage beyond repair (e.g., dropped and broken, fire, flood, etc.) or the item is stolen or lost

A new 36-month rental period does not start in the following situations:

- Replacing equipment due to malfunction, wear and tear, routine maintenance, repair
- Providing different equipment based on a physician order or beneficiary request for an upgrade
- Break-in-need (see "BREAK-IN-SERVICE" below)
- Break-in-billing (see "BREAK-IN-SERVICE" below)
- Changing suppliers

Months 61 and after

At any time after the end of the 5-year reasonable useful lifetime for oxygen equipment, the beneficiary may elect to receive new equipment, thus beginning a new 36-month rental period.

If the beneficiary elects not to receive new equipment after the end of the 5-year reasonable useful lifetime and if the supplier retains title to the equipment, all elements of the payment policy for months 37-60 remain in effect. There is no separate payment for accessories or repairs. If the beneficiary was using gaseous or liquid oxygen equipment during the 36th rental month, payment can continue to be made for oxygen contents.

If the beneficiary elects not to receive new equipment after the end of the 5-year reasonable useful lifetime and if the supplier transfers title of the equipment to the beneficiary, accessories, maintenance, and repairs are statutorily non-covered by Medicare. Contents are separately payable for beneficiary-owned gaseous or liquid systems.

If a beneficiary enters Medicare FFS with beneficiary-owned equipment, accessories, maintenance, and repairs are statutorily non-covered by Medicare. Contents are separately payable for beneficiary-owned gaseous or liquid systems.

Liter Flow Greater Than 4 LPM:

If basic oxygen coverage criteria have been met, a higher allowance for a stationary system for a flow rate of greater than 4 liters per minute (LPM) will be paid only if a blood gas study performed while the beneficiary is on 4 or more LPM meets Group I or II criteria. If a flow rate greater than 4 LPM is billed and the coverage criterion for the higher allowance is not met, payment will be limited to the standard fee schedule allowance. (Refer to related Policy Article for additional information on payment for greater than 4 LPM oxygen.)

Miscellaneous:

Oxygen reimbursement is a bundled payment. All options, supplies and accessories are considered included in the monthly rental payment for oxygen equipment. Oxygen rental is billed using the appropriate code for the provided oxygen equipment. Separately billed options, accessories or supply items will be denied as unbundling.

Emergency or stand-by oxygen systems for beneficiaries who are not regularly using oxygen will be denied as not reasonable and necessary since they are precautionary and not therapeutic in nature.

Refills of Oxygen Contents:

For Durable Medical Equipment, Prosthetics, Orthotics, and Supplies (DMEPOS) items and supplies provided on a recurring basis, billing must be based on prospective, not retrospective use.

Oxygen contents are reimbursed with a monthly allowance covering all contents necessary for the month. Supply allowances are not subject to the refill monitoring and documentation requirements specified by Medicare Program Integrity Manual section 5.2.6.

All other supplies, e.g. tubing, masks or cannulas, etc., are included in the monthly rental payment. Supplies that are not separately payable are not subject to the refill monitoring and documentation requirements specified by Medicare Program Integrity Manual section 5.2.6.

See the Non-Medical Coverage and Payment Rules section of the related Policy Article for additional information about coverage of oxygen contents.

Reasonable Useful Lifetime (RUL):

The reasonable useful lifetime for oxygen equipment is 5 years. The RUL is not based on the chronological age of the equipment. It starts on the initial date of service and runs for 5 years from that date.

CODES*		
CPT	None	
HCPCS	A4575	Topical hyperbaric oxygen chamber, disposable
	A4606	Oxygen probe for use with oximeter device, replacement
	A4608	Transtracheal oxygen catheter, each
	A4615	Cannula, nasal
	A4616	Tubing (oxygen), per foot
	A4617	Mouth piece
	A4619	Face tent
	A4620	Variable concentration mask
	A7525	Tracheostomy mask, each
	A9900	Miscellaneous dme supply, accessory, and/or service component of another hcpcs code
	E0424	Stationary compressed gaseous oxygen system, rental; includes container, contents, regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing
	E0425	Stationary compressed gas system, purchase; includes regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing
	E0430	Portable gaseous oxygen system, purchase; includes regulator, flowmeter, humidifier, cannula or mask, and tubing
	E0431	Portable gaseous oxygen system, rental; includes portable container, regulator, flowmeter, humidifier, cannula or mask, and tubing

	E0433	Portable liquid oxygen system, rental; home liquefier used to fill portable liquid oxygen containers, includes portable containers, regulator, flowmeter, humidifier, cannula or mask and tubing, with or without supply reservoir and contents gauge
	E0434	Portable liquid oxygen system, rental; includes portable container, supply reservoir, humidifier, flowmeter, refill adaptor, contents gauge, cannula or mask, and tubing
	E0435	Portable liquid oxygen system, purchase; includes portable container, supply reservoir, flowmeter, humidifier, contents gauge, cannula or mask, tubing and refill adaptor
	E0439	Stationary liquid oxygen system, rental; includes container, contents, regulator, flowmeter, humidifier, nebulizer, cannula or mask, & tubing
	E0440	Stationary liquid oxygen system, purchase; includes use of reservoir, contents indicator, regulator, flowmeter, humidifier, nebulizer, cannula or mask, and tubing
	E0441	Stationary oxygen contents, gaseous, 1 month's supply = 1 unit
	E0442	Stationary oxygen contents, liquid, 1 month's supply = 1 unit
	E0443	Portable oxygen contents, gaseous, 1 month's supply = 1 unit
	E0444	Portable oxygen contents, liquid, 1 month's supply = 1 unit
	E0445	Oximeter device for measuring blood oxygen levels non-invasively
	E0446	Topical oxygen delivery system, not otherwise specified, includes all supplies and accessories
	E0447	Portable oxygen contents, liquid, 1 month's supply = 1 unit, prescribed amount at rest or nighttime exceeds 4 liters per minute (lpm)
	E1390	Oxygen concentrator, single delivery port, capable of delivering 85 percent or greater oxygen concentration at the prescribed flow rate
	E1391	Oxygen concentrator, dual delivery port, capable of delivering 85 percent or greater oxygen concentration at the prescribed flow rate, each
	E1392	Portable oxygen concentrator, rental
	E1405	Oxygen and water vapor enriching system with heated delivery
	E1406	Oxygen and water vapor enriching system without heated delivery
	E0455	Oxygen tent, excluding croup or pediatric tents
	E0555	Humidifier, durable, glass or autoclavable plastic bottle type, for use with regulator or flowmeter
	E0580	Nebulizer, durable, glass or autoclavable plastic, bottle type, for use with regulator or flowmeter
	E1352	Oxygen accessory, flow regulator capable of positive inspiratory pressure
	E1353	Regulator
	E1354	Oxygen accessory, wheeled cart for portable cylinder or portable concentrator, any type, replacement only, each
	E1355	Stand/rack
	E1356	Oxygen accessory, battery pack/cartridge for portable concentrator, any type, replacement only, each
	E1357	Oxygen accessory, battery charger for portable concentrator, any type, replacement only, each
	E1358	Oxygen accessory, dc power adapter for portable concentrator, any type, replacement only, each

	K0738	Portable gaseous oxygen system, rental; home compressor used to fill portable oxygen cylinders; includes portable containers, regulator, flowmeter, humidifier, cannula or mask, and tubing

***Coding Notes:**

- The above code list is provided as a courtesy and may not be all-inclusive. Inclusion or omission of a code from this policy neither implies nor guarantees reimbursement or coverage. Some codes may not require routine review for medical necessity, but they are subject to provider contracts, as well as member benefits, eligibility and potential utilization audit.
- All unlisted codes are reviewed for medical necessity, correct coding, and pricing at the claim level. If an unlisted code is submitted for non-covered services addressed in this policy then it will be **denied as not covered**. If an unlisted code is submitted for potentially covered services addressed in this policy, to avoid post-service denial, **prior authorization is recommended**.
- **See the non-covered and prior authorization lists on the Company Medical Policy, Reimbursement Policy, Pharmacy Policy and Provider Information website for additional information.**
- HCPCS/CPT code(s) may be subject to National Correct Coding Initiative (NCCI) procedure-to-procedure (PTP) bundling edits and daily maximum edits known as "medically unlikely edits" (MUEs) published by the Centers for Medicare and Medicaid Services (CMS). This policy does not take precedence over NCCI edits or MUEs. Please refer to the CMS website for coding guidelines and applicable code combinations.

REFERENCES

1. Centers for Medicare & Medicaid Services. National Coverage Determination (NCD) for Home Use of Oxygen (240.2). Effective 1/3/2023. https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=169. Published 1993. Accessed 3/25/2024.
2. Centers for Medicare & Medicaid Services. Local Coverage Determination (LCD): Oxygen and Oxygen Equipment (L33797). Effective 1/1/2023. https://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=33797. Published 2015. Accessed 2/9/2023.
3. Centers for Medicare & Medicaid Services. Local Coverage Article: Oxygen and Oxygen Equipment - Policy Article (A52514). Effective 1/1/2023. https://www.cms.gov/medicare-coverage-database/details/article-details.aspx?articleId=52514. Accessed 3/25/2024.
4. Petersen AS, Barloese MC, Lund NL, Jensen RH. Oxygen therapy for cluster headache. A mask comparison trial. A single-blinded, placebo-controlled, crossover study. *Cephalalgia : an international journal of headache.* 2017;37(3):214-224.
5. Robbins MS, Starling AJ, Pringsheim TM, Becker WJ, Schwedt TJ. Treatment of Cluster Headache: The American Headache Society Evidence-Based Guidelines. *Headache.* 2020;56(7):1093-1106.
6. Beithon J, Gallenberg M, Johnson K, et al. Diagnosis and treatment of headache. *Bloomington (MN): Institute for Clinical Systems Improvement (ICSI).* 2019.
7. National Institute for Health and Care Excellence. Headaches in over 12s: diagnosis and management. https://www.nice.org.uk/guidance/cg150. Published 2021. Accessed 3/25/2024.

POLICY REVISION HISTORY

DATE	REVISION SUMMARY
2/2023	Converted to new policy template.
4/2023	Annual review. No changes.
7/2024	Annual review. Change denial language from investigational to not medically necessary.