

## Medical Policy



### Oxygen and Oxygen Equipment

#### Description

Oxygen and oxygen equipment involve the system for furnishing oxygen, the vessels for storing oxygen, the tubing and related supplies that allow the safe delivery of oxygen in the home and the oxygen contents.

#### Policy

Oxygen and oxygen equipment are considered **reasonable and necessary** when a member meets coverage criteria.

#### Policy Guidelines

##### Medicare Member Coverage Criteria:

Refer to Medicare's Oxygen and Oxygen Equipment policy (L33797) and article (A52514) for coverage criteria.

##### Non-Medicare Member Coverage Criteria:

- A. Oxygen and oxygen related medical supplies are considered reasonable and necessary when ordered by the member's treating practitioner for the following circumstances:
1. Member has a diagnosis of severe lung disease and qualifying lab values (see section below on qualifying lab values):
    - Bronchiectasis
    - Chronic obstructive pulmonary disease (COPD)
    - Cystic fibrosis
    - Diffuse interstitial lung disease
    - Pediatric bronchopulmonary dysplasia (BPD)
    - Widespread pulmonary neoplasm; OR
  2. Member has a diagnosis of other hypoxia-related symptoms or findings with qualifying lab values (see section below on qualifying lab values):
    - Erythrocytosis (hematocrit greater than 55%)
    - Pulmonary hypertension
    - Recurring congestive heart failure due to chronic cor pulmonale; OR
  3. Other diagnoses of hypoxia-related symptoms or findings with qualifying lab values (see section below on qualifying lab values) that usually resolve with limited or short-term oxygen therapy:

## Medical Policy



### Oxygen and Oxygen Equipment

- Asthma
- Croup
- Bronchitis
- Pneumonia

The above diagnoses may be considered reasonable and necessary for short-term therapy (generally less than 1 month duration), it is not reasonable and necessary on an ongoing basis absent special circumstances. Requests for more than short-term use will be reviewed on an individual consideration basis. For ongoing oxygen treatment due to the above, repeat qualifying lab values are reviewed on a monthly basis.

4. Other diagnoses for which short-term use of oxygen has been shown to be beneficial (unrelated to hypoxia), e.g., cluster headaches may be certified as reasonable and necessary on an individual case basis upon medical review:
  - Cluster headaches (E0431)
  - Hemoglobinopathies
  - Infants with BPD – may have variable oxygen needs and consideration will be reviewed on an individual consideration basis and may be required in the absence of documentation of otherwise qualifying oxygen saturation values.

Oxygen for home use is considered not reasonable and necessary for indications other than those noted above. Oxygen therapy will also be considered not reasonable and necessary if any of the following conditions are present:

- 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.
- Dyspnea without cor pulmonale or evidence of hypoxemia.
- 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<sub>2</sub> will improve the oxygenation of tissues with impaired circulation.
- Terminal illnesses that do not affect the respiratory system.
- Headaches other than cluster headaches, as noted above.
- Sleep apnea when the condition does not otherwise qualify for home oxygen.
- Treatment of pediatric seizures.
- Prophylactic home oxygen to reduce transfusion-related adverse events in pregnant women with sickle cell disease.

- A. Qualifying Lab Values (all qualification studies must be done while on room air unless medically contraindicated. Documentation of blood gas values can come

## Medical Policy



### Oxygen and Oxygen Equipment

from the doctor's office, hospital or from an outpatient laboratory – see Miscellaneous section below for further clarification):

1. Continuous Oxygen:
    - a. Resting PaO<sub>2</sub> less than or equal to 55 mm Hg or oxygen saturation less than or equal to 88%
    - b. Resting PaO<sub>2</sub> of 56-59 mm Hg or oxygen saturation of 89% in the presence of any of the following:
      1. Dependent edema suggesting congestive heart failure
      2. Erythrocythemia (hematocrit greater than 56%)
      3. P pulmonale on the electrocardiogram (P wave greater than 3 mm in standard leads II, III, or aVF)
    - c. Resting PaO<sub>2</sub> greater than 59 mm Hg or oxygen saturation greater than 89% only with additional documentation justifying the oxygen prescription and a summary of more conservative therapy that has failed.
  2. Non-continuous Oxygen (oxygen flow rate and number of hours per day must be specified):
    - a. During exercise: PaO<sub>2</sub> less than or equal to 55 mm Hg or oxygen saturation less than or equal to 88% with a low level of exertion.
    - b. During sleep: PaO<sub>2</sub> less than or equal to 55 mm Hg or oxygen saturation less than or equal to 88% with associated complications, such as pulmonary hypertension, daytime somnolence, and cardiac arrhythmias.
- B. Oxygen Delivery systems – the following delivery systems may be considered reasonable and necessary:
1. Stationary: oxygen concentrators, liquid reservoirs, or large cylinders that are designed for stationary use may be considered reasonable and necessary for members who do not regularly go beyond the limits of a stationary oxygen delivery system with a 50-ft. tubing or those who use oxygen only during sleep.
  2. Portable: systems that weigh 10 lbs. or more and are designed to be transported but not easily carried by the member (steel cylinder attached to wheels) may be considered reasonable and necessary for members who occasionally go beyond the limits of a stationary oxygen delivery system with 50-ft. tubing for less than 2 hours per day for most days of the week (minimum 2 hours/week).

## Medical Policy



### Oxygen and Oxygen Equipment

3. Ambulatory: systems that weigh less than 10 lbs. When filled with oxygen, are designed to be carried by the member, and will last for 4 hours at a flow rate equivalent to 2 L/min continuous flow; e.g., liquid refillable units and aluminum or fiber wrapped light-weight cylinders, with or without oxygen conserving devices. Ambulatory systems may be considered reasonable and necessary for members who regularly go beyond the limits of a stationary oxygen delivery system with a 50-ft. tubing for 2 hours or more per day and for most days of the week (minimum 6 hours/week). Prescription based on the activity status of the member.
4. Portable Oxygen Concentrators: Portable oxygen concentrators and combination stationary/portable oxygen systems are considered medically necessary as an alternative to ambulatory oxygen systems for members who meet both of the following criteria:
  - Member meets criteria for ambulatory oxygen systems (above); AND
  - Member is regularly (at least monthly) away from home for durations that exceed the capacity of ambulatory oxygen systems.

#### C. Reassessment

Except as noted above for short-term oxygen cases where repeat qualifying lab values are reviewed on a monthly basis, reassessment of oxygen needs through pulse oximetry or arterial blood gas is required and must be performed by an independent respiratory provider 12 months after the initiation of therapy for persons who qualify for oxygen based upon an arterial PO<sub>2</sub> at or below 55 mm Hg or an arterial oxygen saturation at or below 88%, or at 3 months after initiation for persons who qualify for oxygen based upon an arterial PO<sub>2</sub> between 56 – 59 mm Hg or an arterial oxygen saturation of 89% with dependent edema, P pulmonale, or erythrocythemia.

#### For Pediatric Members:

The pediatric population is considered to be the age group under 21 years of age.

Oxygen equipment is considered reasonable and necessary for members meeting the following general criteria:

- The oxygen saturation rate is 90% or below or PO<sub>2</sub> level is 65mm HG or below.
- Oxygen is required during a variety of activities (sleeping, feeding, resting).

## Medical Policy



### Oxygen and Oxygen Equipment

Oxygen therapy may be considered medically necessary for members under 21 years of age with ONE of the following conditions:

- Bronchopulmonary dysplasia (BPD); OR
- Cystic fibrosis; OR
- Pulmonary fibrosis; OR
- Pulmonary insufficiency of prematurity (PIP); OR
- Tracheomalacia; OR
- Chronic lung disease; OR
- Agenesis, hypoplasia, dysplasia of the lung; OR
- Chronic cardiopulmonary disease (cor pulmonale); OR
- “P” pulmonale on EKG; OR
- Erythrocytosis (familial polycythemia, hereditary elliptocytosis, or polycythemia/secondary); OR
- Other diagnoses, based upon medical necessity

In addition, for members 21 years of age or less, laboratory results of oximetry or arterial blood gases must show:

- The pO<sub>2</sub> levels at or below 65 mm Hg; OR
- Oxygen saturation at or below 90 percent

For portable oxygen systems, the above criteria must be met and ambulation outside the home is necessary.

#### **Proof of Continued Need - Testing Specifications:**

The medical necessity for ongoing oxygen in the home must be demonstrated via either blood gas results or pulse oximetry performed by the individual’s treating practitioner or an independent respiratory practitioner one month after initiation of therapy for conditions that may be expected to be short-term, such as pneumonia, asthma, bronchitis or bronchiolitis, and three months after initiation of therapy for other conditions. Following the three-month initial evaluation, pulse oximetry or arterial blood gas results

## Medical Policy



### Oxygen and Oxygen Equipment

must be reported within 12 months of the initiation of oxygen and whenever there is an increase in the amount of oxygen or change in the type of oxygen equipment being requested.

#### MISCELLANEOUS:

- Hypoxemia must be demonstrated by a recent blood gas analysis or pulse oximetry, and alternative treatment methods should be considered and attempted prior to initiating home oxygen. Blood gas values must be obtained on room air unless medically contraindicated. Home oxygen must be prescribed by a practitioner who has seen and examined the patient within one month of the request. The prescription must specify the diagnosis and the oxygen flow rate and estimate the frequency and duration of therapy.
- In the following situations, a new order must be obtained and kept on file by the supplier, but neither a new CMN or a repeat blood gas study are required:
  - Prescribed maximum flow rate changes but remains within one of the following categories: (a) less than 1 LPM, (b) 1-4 LPM, (c) greater than 4 LPM.
  - Change from one type of stationary system to another (i.e., concentrator, liquid, gaseous).
  - Change from one type of portable system to another (i.e., gaseous or liquid tanks, portable concentrator, transfilling system).
- Emergency or stand-by oxygen systems for members who are not regularly using oxygen will be considered not reasonable and necessary since they are precautionary and not therapeutic in nature.
- The Non-Invasive OPEN Ventilation System (NIOV) provides positive pressure inspiratory support for members using oxygen. Coded E1352. Based on clinical data provided by the manufacturer, this item is effective only when used in conjunction with oxygen; therefore, it is classified as an accessory to oxygen equipment. Oxygen reimbursement is a bundled payment. All options, supplies and accessories are considered included in the monthly rental payment.
- Code E0467 describes a ventilator that integrates the function of multiple types of equipment into a single device. Code E0467 combines the function of a ventilator with those of any combination or all of the following:
  - Oxygen equipment
  - Nebulizer and compressor

## Medical Policy



### Oxygen and Oxygen Equipment

- Aspirator (suction device)
- Cough stimulator (multiple products)
- Positive airway pressure devices (PAP and RAD)
- Custom fabricated oral appliances

The following oxygen and oxygen equipment HCPCS codes for individual items are included in the functionality of code E0467:

- HCPCS codes E0424, E0431, E0433, E0434, E0439, E0441, E0442, E0443, E0444, E0447, E1390, E1391, E1392, E1405, E1406 and K0738

Claims for any of the HCPCS codes listed above that are submitted on the same claim or that overlap any date(s) of service for E0467 is considered to be unbundling.

In addition, any claim for repair (HCPCS code K0739 for labor and any HCPCS code for replacement items) of beneficiary-owned equipment identified by HCPCS codes listed above is considered as unbundling if the date(s) of service for the repair overlaps any date(s) of service for code E0467.

Claims for code E0467 with a date(s) of service that overlaps date(s) of service for any of the following scenarios are considered as a claim for same or similar equipment when the beneficiary:

- Is currently in a rental month for any of the items listed above
- Owns any of the equipment listed above that has not reached the end of its reasonable useful lifetime.
- Has oxygen equipment that reached the 36-month rental but has not reached the end of its reasonable useful lifetime.

### Topical Oxygen Therapy (TOT)

Topical oxygen therapy (TOT) has been proposed to promote wound healing. Two TOT modalities that are used to deliver oxygen to a wound are:

1. Intermittent TOT: Oxygen is delivered at low pressure (0.049 to 1.03 atmospheres, depending on the system) to a wound encased in a closed chamber for multiple treatments, typically for 90 minutes a day for four consecutive days, followed by three days without TOT.

## Medical Policy



### Oxygen and Oxygen Equipment

2. Continuous TOT (also called continuous diffusion of oxygen or CDO): Low-flow oxygen (<1 liters/minute) is applied to the wound surface continuously via a cannula inserted into a specially designed dressing.

The term TOT will refer to the use of topical oxygen in general and will include both intermittent and continuous modalities.

TOT is not generally accepted as a standard treatment for chronic wounds, and strong evidence for the effectiveness of this treatment is currently lacking. Based on the lack of evidence, the use of TOT for wound healing is considered not reasonable and necessary. Topical hyperbaric oxygen chambers (A4575) will be denied as not reasonable and necessary. Topical oxygen delivery systems (E0446) will be denied as not reasonable and necessary.

#### HCPCS Level II Codes and Description

##### Equipment:

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



## Medical Policy



### Oxygen and Oxygen Equipment

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

## Medical Policy



### Oxygen and Oxygen Equipment

#### HEATED DELIVERY

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

#### Accessories:

A4575 TOPICAL HYPERBARIC OXYGEN CHAMBER, DISPOSABLE

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

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 NIOV- NON-INVASIVE OPEN VENTILLATION SYSTEM. PROVIDES POSITIVE PRESSURE INSPIRATORY SUPPORT FOR MEMBERS USING OXYGEN.

E1353 REGULATOR

E1354 OXYGEN ACCESSORY, WHEELED CART FOR PORTABLE CYLINDER OR PORTABLE CONCENTRATOR, ANY TYPE, REPLACEMENT ONLY, EA.

E1355 STAND/RACK

E1356 OXYGEN ACCESSORY, BATTERY PACK/CARTRIDGE FOR PORTABLE CONCENTRATOR, ANY TYPE, REPLACEMENT ONLY

## Medical Policy



### Oxygen and Oxygen Equipment

E1357 OXYGEN ACCESSORY, BATTERY CHARGER FOR PORTABLE CONCENTRATOR, ANY TYPE, REPLACEMENT ONLY, EA.

E1358 OXYGEN ACCESSORY, DC POWER ADAPTER FOR PORTABLE CONCENTRATOR, ANY TYPE REPLACEMENT ONLY, EA.

#### Documentation Requirements

Items in this policy may be subject to the Affordable Care Act (ACA) 6407 requirements.

The Affordable Care Act (ACA) 6407 requires that the treating practitioner conduct a face-to-face examination during the six month period preceding the written order. The documentation must be received by the provider prior to delivery for certain DME items. The documentation must describe a medical condition for which the DME is being prescribed.

CERTIFICATE OF MEDICAL NECESSITY (CMN) providers and suppliers no longer need to submit CMN for services rendered after 1-1-23.

#### Important Note:

Northwood's Medical Policies are developed to assist Northwood in administering plan benefits and determining whether a particular DMEPOS product or service is reasonable and necessary. Equipment that is used primarily and customarily for a non-medical purpose is not considered durable medical equipment.

Coverage determinations are made on a case-by-case basis and are subject to all of the terms, conditions, limitations, and exclusions of the member's contract including medical necessity requirements.

The conclusion that a DMEPOS product or service is reasonable and necessary does not constitute coverage. The member's contract defines which DMEPOS product or service is covered, excluded or limited. The policies provide for clearly written, reasonable and current criteria that have been approved by Northwood's Medical Director.

The clinical criteria and medical policies provide guidelines for determining the medical necessity for specific DMEPOS products or services. In all cases, final benefit determinations are based on the applicable contract language. To the extent there are any conflicts between medical policy guidelines and applicable contract language, the contract language prevails. Medical policy is not intended to override the policy that defines the member's benefits, nor is it intended to dictate to providers how to direct care. Northwood Medical policies shall not be interpreted to limit the benefits afforded to

## Medical Policy



### Oxygen and Oxygen Equipment

Medicare or Medicaid members by law and regulation and Northwood will use the applicable state requirements to determine required quantity limit guidelines.

Northwood's policies do not constitute medical advice. Northwood does not provide or recommend treatment to members. Members should consult with their treating practitioner in connection with diagnosis and treatment decisions.

Northwood follows all CMS National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), as applicable.

#### References

1. CGS Administrators, LLC. Jurisdiction B DME MAC, Oxygen and Oxygen Equipment. Local Coverage Determination No. L33797 Last accessed and reviewed 12-15-23.
2. WellCare Health plan policy and procedure Oxygen Use and Oxygen Concentrator HS-088. Last revision: 12-03-15. Reviewed annually. Accessed January 7, 2020.
3. Noridian Healthcare Solutions, LLC. Oxygen and Oxygen Equipment. Local Coverage Determination No. L33797. Durable Medical Equipment Medicare Administrative Carrier Jurisdiction A; revised January 1, 2020. Reviewed/accessed 12-15-22.
4. Aetna: Oxygen [http://www.aetna.com/cpb/medical/data/1\\_99/0002.html](http://www.aetna.com/cpb/medical/data/1_99/0002.html). Last accessed/reviewed 12-15-23.
5. Cigna: Oxygen for Home Use [http://www.cigna.com/assets/docs/health-care-professionals/coverage\\_positions/mm\\_0207\\_coveragepositioncriteria\\_oxygen\\_for\\_home\\_use.pdf](http://www.cigna.com/assets/docs/health-care-professionals/coverage_positions/mm_0207_coveragepositioncriteria_oxygen_for_home_use.pdf).
6. Petty TL, O'Donohue WJ Jr. Further recommendations for prescribing, reimbursement, technology development, and research in long-term oxygen therapy. Summary of the Fourth Oxygen Consensus Conference, Washington, DC, October 15-16, 1993. Am Respir Critl Care Med. 1994;150(3):875-877.
7. U.S. Department of Health and Human Services, Center for Medicare & Medicaid Services (CMS). Evidence of medical necessity for home oxygen therapy. Medicare Carriers Manual §3312. Baltimore, MD: CMS; 2002.
8. Sanchez Agudo L, Cornudella R, Estopa Miro R, et al. Guidelines for indications and use of domiciliary continuous oxygen (DCO) therapy. SEPAR guidelines. Arch Bronconeumol. 1998;34(2):87-94.

## Medical Policy



### Oxygen and Oxygen Equipment

9. O'Donohue WJ Jr. Home oxygen therapy. *Clin Chest Med.* 1997;18(3):535-545.
10. O'Donohue WJ Jr. Home oxygen therapy. *Med Clin North Am.* 1996;80(3):611-622.
11. Wilkinson J, Rees J. Domiciliary oxygen. *Br J Clin Pract.* 1996;50(3):151-153.
12. Weitzenblum E. Observance of long-term oxygen therapy at home. *Chest.* 1996;109(5):1135-1136.
13. Tarpy SP, Celli BR. Long-term oxygen therapy. *N Engl J Med.* 1995;333(11):710-714.
14. Tiep BL. Long-term home oxygen therapy. *Clin Chest Med.* 1990;11(3):505-521.
15. Herrick TW, Yeager H Jr. Home oxygen therapy. *Am Fam Physician.* 1989;39(2):157-162.
16. Petty TL. Home oxygen therapy. *Mayo Clin Proc.* 1987;62(9):841-847.
17. Okpala I. The management of crisis in sickle cell disease. *Eur J Haematol.* 1998;60(1):1-6.
18. Zipursky A, Robieux IC, Brown FJ, et al. Oxygen therapy in sickle cell disease. *Am J Pediatr Hematol Oncol.* 1992;14(3):222-228.
19. U.S. Department of Health and Human Services, Center for Medicare and Medicaid Services (CMS). Home use of oxygen. *Medicare Coverage Issues Manual §60-64.* Baltimore, MD: CMS, 2002.
20. Cranston JM, Crockett AJ, Moss JR, Alpers JH. Domiciliary oxygen for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2005;(4):1744.
21. Ram FS, Wedzicha JA. Ambulatory oxygen for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2002;(2):CD000238.
22. Dunne PJ. The demographics and economics of long-term oxygen therapy. *Respir Care.* 2000;45(2):223-228; discussion 228-230.
23. O'Donohue WJ Jr, Bowman TJ. Hypoxemia during sleep in patients with chronic obstructive pulmonary disease: Significance, detection, and effects of therapy. *Respir Care.* 2000;45(2):188-191; discussion 192-193.
24. Kotecha S, Allen J. Oxygen therapy for infants with chronic lung disease. *Arch Dis Child Fetal Neonatal Ed.* 2002;87(1):F11-F14.

## Medical Policy



### Oxygen and Oxygen Equipment

25. Banken R. Home oxygen therapy for the treatment of cluster headache. AETMIS 02-01 NE. Montreal, QC: Agence d'Evaluation des Technologies et des Modes d'Intervention en Sante (AETMIS); 2002.
26. Gracey K, Talbot D, Lankford R, Dodge P. The changing face of bronchopulmonary dysplasia: Part 2. Discharging an infant home on oxygen. *Adv Neonatal Care*. 2003;3(2):88-98.
27. Agence D'Evaluation des Technologies et des Modes D'Intervention en Sante (AETMIS). Portable oxygen therapy for COPD. Hospital Technology at Home. AETMIS 04-03. Montreal, QC; AETMIS; July 2004.
28. Lau J, Chew P, Wang C, White A. Long term oxygen therapy for severe COPD. Prepared for AHRQ by Tufts-New England Medical Center Evidence-Based Practice Center under Contract No. 290-02-0022. Rockville, MD: Agency for Healthcare Research and Quality (AHRQ); June 11, 2004.
29. Lacasse Y, Lecours R, Pelletier C, Begin R, Maltais F. Randomised trial of ambulatory oxygen in oxygen-dependent COPD. *Eur Respir J*. 2005;25(6):1032-1038.
30. Bradley JM, O'Neill B. Short term ambulatory oxygen for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2005;(2):CD004356.
31. McDonald CF, Crockett AJ, Young IH. Adult domiciliary oxygen therapy. Position statement of the Thoracic Society of Australia and New Zealand. *Med J Aust*. 2005;182(12):621-626.
32. Centers for Medicare and Medicaid Services (CMS). Decision memo for home use of oxygen (CAG-00296N). Medicare Coverage Database. Rockville, MD: CMS; March 20, 2006. Available at: <http://www.cms.hhs.gov/mcd/viewdecisionmemo.asp?id=169>. Accessed January 30, 2007.
33. Mallory GB, Fullmer JJ, Vaughan DJ. Oxygen therapy for cystic fibrosis. *Cochrane Database Syst Rev*. 2005;(4):CD003884.
34. Ait-Khaled N, Enarson DA. Managing acute attacks of asthma. *Int J Tuberc Lung Dis*. 2006;10(5):484-489.
35. Greenough A. Bronchopulmonary dysplasia--long term follow up. *Paediatr Respir Rev*. 2006;7 Suppl 1:S189-S191.

## Medical Policy



### Oxygen and Oxygen Equipment

36. Austin M, Wood-Baker R. Oxygen therapy in the pre-hospital setting for acute exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2006;(3):CD005534.
37. Nonoyama ML, Brooks D, Lacasse Y, et al. Oxygen therapy during exercise training in chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2007;(2):CD005372.
38. Say L, Gülmezoglu AM, Hofmeyr GJ. Maternal oxygen administration for suspected impaired fetal growth. *Cochrane Database Syst Rev.* 2005;(1):CD000137.
39. Bradley JM, Lasserson T, Elborn S, et al. A systematic review of randomized controlled trials examining the short-term benefit of ambulatory oxygen in COPD. *Chest.* 2007;131(1):278-285.
40. Tricenturion LLC. 13.1 Oxygen and oxygen equipment. Local Medical Review Policies (LMRPs). Medicare Durable Medical Equipment Regional Carrier (DMERC) Regions A and B. Columbia, SC: TriCenturion; effective July 1, 2000.
41. American Association of Respiratory Care (AARC). AARC clinical practice guideline. Oxygen therapy in the home or alternate site health care facility--2007 revision & update. *Respir Care.* 2007;52(8):1063-1068.
42. Cranston JM, Crockett A, Currow D. Oxygen therapy for dyspnoea in adults. *Cochrane Database Syst Rev.* 2008;(3):CD004769.
43. Thoracic Society of Australia and New Zealand, Fitzgerald DA, Massie RJ, Nixon GM, et al. Infants with chronic neonatal lung disease: Recommendations for the use of home oxygen therapy. *Med J Aust.* 2008;189(10):578-582.
44. Balfour-Lynn IM. Domiciliary oxygen for children. *Pediatr Clin North Am.* 2009;56(1):275-296, xiii.

#### **SPECIAL COVERAGE INFORMATION PER PLAN:**

**SHP COMMERCIAL AND SAS MEMBERS ONLY. For Medicare Advantage follow Medicare guidelines without the criteria for clinical trials.**

#### **Criteria for Cluster Headaches**

- D. Home oxygen therapy (unrelated to hypoxia) for intermittent use for cluster headaches is considered medically necessary when ALL of the following criteria are met:
  - a. Cluster headaches that meet the diagnostic criteria used by the

## Medical Policy



### Oxygen and Oxygen Equipment

International Headache Society to form a definitive diagnosis of CH (see criteria below); and

- b. Where headaches are refractory to prescription medications (prescribers must document what has been tried and failed).
- E. Diagnostic criteria for cluster headaches must meet ALL of the following criteria:
- a. At least five attacks (within one month) fulfilling criteria b-d; and
  - b. Severe or very severe unilateral orbital, supraorbital and/or temporal pain lasting 15-180 minutes (when untreated); and
  - c. At least one of the following criteria must be met:
    - 1. Conjunctival injection and/or lacrimation; or
    - 2. Nasal congestion and/or rhinorrhea; or
    - 3. Eyelid edema; or
    - 4. Forehead and facial sweating; or
    - 5. Forehead and facial flushing; or
    - 6. Sensation or fullness in the ear; or
    - 7. Miosis and/or ptosis; or a sense of restlessness or agitation; and
  - d. Attacks have a frequency between one every other day and 8 per day for more than half of the time when the disorder is active.
- F. Initial approval of oxygen would be for 6 months; member is to be reevaluated after 6 months to assess effectiveness of oxygen therapy and determine ongoing need for oxygen. Code E0431 ONLY
- G. Home oxygen therapy is managed by Northwood.
- H. NO clinical trials are required for SHP members.

#### Change/Authorization History

Revision Number	Date	Description of Change	Prepared/Reviewed by	Approved by	Review Date:	Effective Date:
A	Nov.2006	Initial Release	Rosanne Brugnoni	Ken Fasse	n/a	
01		Annual Review / no revisions	Susan Glomb	Ken Fasse	Dec.2008	
02	Jan.2009	HCPCS Codes added: E1354, E1356, E1357,	Susan Glomb	Ken Fasse		



# Medical Policy



## Oxygen and Oxygen Equipment

		and E1358				
03	Jan.2009 with June 2009 revisions	Clarified conditions for blood gas studies. Clarified testing requirements when exercise test results are used to qualify. Revised certification section to address new payment section. Moved information on payment of greater than 4 LPM oxygen to the Policy Article, Non-Medical Necessity Coverage and Payment Rules section. Added RA modifier for Medicare patients.	Susan Glomb	Ken Fasse		
04	Dec.4, 2009	Policy update. Annual review.	Susan Glomb	Ken Fasse	Dec.09	
05	01-05-10	Added code: E0433; portable liquid oxygen system, rental; home liquefier used to fill portable liquid oxygen containers, includes portable containers, regulator, flowmeter, humidifier, cannula or mask	Susan Glomb	Ken Fasse		

## Medical Policy



### Oxygen and Oxygen Equipment

		<p>and tubing, with or without supply reservoir and contents gauge.</p> <p>Narrative changes:</p> <p>E0441 changed to Stationary oxygen contents, gaseous, 1 month's supply = 1 unit.</p> <p>E0442 changed to Stationary oxygen contents, liquid, 1 month's supply = 1 unit.</p> <p>E0444 changed to Portable oxygen contents, liquid, 1 month's supply = 1 unit.</p>				
06	9-16-10	<p>Policy reviewed and updated to reflect changes to Medicare policy and LCD dated 7-1-10 e.x., Coverage for maintenance and servicing months 37-60.</p>	Susan Glomb	Ken Fasse		
07	12-03-10	<p>Annual Review – No changes</p>	Susan Glomb	Ken Fasse	Dec.2010	
08	02-04-11	<p>Policy update to reflect guidelines for BMCHP members.</p>	Susan Glomb	Ken Fasse		
09	06-06-11	<p>Information for cluster headaches added to policy.</p>	Susan Glomb	Dr. B. Almasri		
10	07-20-11	<p>Added Important Note to all Medical Policies</p>	Susan Glomb	Dr. B. Almasri		

## Medical Policy



### Oxygen and Oxygen Equipment

11	11-22-11	Annual Review. Policy format changed. Added References to Policy.	Susan Glomb	Dr. B. Almasri	Nov. 2011	
12	12-4-12	Annual Review – No changes	Susan Glomb	Dr. B. Almasri	Dec 2012	
13	12-30-13	Annual Review. Added description for a Non invasive OPEN ventilation system. Coded as E1352. Also, deleted Codes K0741 and K0742.	Susan Glomb	Dr. B. Almasri	Dec 2013	
14	12-4-14	Annual Review. Added: Items in this policy may be subject to the Affordable Care Act (ACA) 6407 requirements	Susan Glomb	Dr. B. Almasri		
15	12-16-15	Annual Review. Added specific Medicare coverage reference information.	Lisa Wojno	Dr. B. Almasri		
16	12-06-16	Annual Review. No Changes.	Lisa Wojno	Dr. B. Almasri	December 2016	
17	03-01-17	Policy updated to reflect criteria for SHP members in “boxed” area.	Susan Glomb	Dr. B. Almasri		
18	12-20-17	Annual Review. No Changes.	Lisa Wojno	Dr. Cheryl Lerchin	December 2017	
19	12-12-18	Annual review. Updated Medicare references.	Carol Dimech	Dr. C. Lerchin	December 2018	

# Medical Policy



## Oxygen and Oxygen Equipment

20	12-18-19	Annual review. Per CMS, added HCPCS E0447, E0467. Added to “experimental and investigational” list pediatric seizures, prophylactic use to reduce transfusion-related adverse events in pregnant women with sickle cell disease.	Carol Dimech	Dr. C. Lerchin	December 2019	December 2019
21	01-07-20	Policy updated to reflect per American Academy of Pediatrics the age of a Pediatric patient is 21 years or less. Also updates include the inclusion of medical necessity diagnoses for pediatric members and acceptable results for lab results or oximetry for pediatrics.	Susan Glomb	Dr. C. Lerchin	January 2020	January 2020
22	12-11-20	Annual Review. Updated ‘physician’ to ‘practitioner’. Per CMS: added ‘Topical Oxygen Therapy’ information and codes A4575 and E0446.	Lisa Wojno	Dr. C. Lerchin	December 2020	December 2020
23	12-06-21	Annual Review. Added	Carol Dimech/ Susan Glomb	Dr. C. Lerchin	December 06, 2021	

# Medical Policy



## Oxygen and Oxygen Equipment

		NCD/LCD verbiage to "Important Note".				
24	12-15-22	Annual Review Per CMS added CMN update effective 1-1-23	Carol Dimech/Susan Glomb	Dr. C. Lerchin	December 15, 2022	
25	12-15-23	Annual Review. No Changes.	Carol Dimech/Susan Glomb	Dr. C. Lerchin	December 15, 2023	December 15, 2023