Clinical Policy: Outpatient Oxygen Use

Reference Number: MC.CP.MP.190
Date of Last Revision: 12/25

Coding Implications
Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Oxygen therapy is the administration of oxygen at concentrations greater than that in ambient air (20.9%) with the intent of treating or preventing the symptoms and manifestations of hypoxemia.[1] This policy is intended to supplement the criteria in Center for Medicare and Medicaid Services (CMS) National Coverage Determination (NCD): Home Use of Oxygen (240.2), Local Coverage Determination (LCD): Oxygen and Oxygen Equipment (L33797), and Local Coverage Article (LCA): Oxygen and Oxygen Equipment (A52514). The coverage (medical necessity) criteria in NCD 240.2, LCD L33797, and LCA A52514 note diagnoses and specific symptoms that qualify for outpatient oxygen use but do not provide enough detailed criteria for cluster headaches, or when it is clinically appropriate to continue oxygen therapy, limiting the ability to consistently determine medical necessity for outpatient oxygen use that would benefit the member/enrollee. Supplementing the criteria offered by CMS with the coverage criteria outlined in this policy provides a consistent basis for determining when outpatient oxygen use is medically necessary.

The below criteria are sourced from the following: NCD: Home Use of Oxygen (240.2), LCD: Oxygen and Oxygen Equipment (L33797), LCA: Oxygen and Oxygen Equipment (A52514), which are supported by the American Association for Respiratory Care (AARC) 2007 clinical practice guideline, the American Thoracic Society (ATS) 2021 clinical practice guideline, and the joint statement on oxygen therapy for cluster headache from the American Headache Society (AHS) and the American Migraine Foundation (AMF).[1,4,7,8,9,14]

The AARC clinical practice guideline states that long term oxygen therapy (LTOT) in the home or alternate site health care facility is indicated for treating hypoxemia and has a significant positive impact on hypoxemic patients with chronic obstructive pulmonary disease (COPD).[1] The ATS clinical practice guideline strongly recommends LTOT for patients with COPD or interstitial lung disease (ILD) with severe chronic resting hypoxemia.[4] The AARC and ATS agree that LTOT has been shown to reduce hospitalizations and lengths of stay.[1,4] The AHS and AMF joint statement also recommends that CMS cover home oxygen therapy for the acute treatment of cluster headaches.[10]

Risks of unnecessary or excessive supplemental oxygen use include absorptive atelectasis, airway injury, and worsening of hypercapnia. Oxygen use also places patients at increased risk of facial burns and airway fire as well as nasal dryness, accidental falls from oxygen tubing, and hypoxemia from equipment failure.[15]

To optimize the benefit of supplemental oxygenation vs. its risk of harms, the need for and level of prescribed oxygen should be regularly evaluated by the provider, especially as the patient's condition changes.

Note: For criteria applicable to non-Medicare plans, please see CP.MP.190 Outpatient Oxygen Use.

Policy/Criteria

I. It is the policy of health plans affiliated with Centene Corporation® that initial approval of oxygen concentrators and oxygen systems for severe lung disease or hypoxemia-related symptoms for members/enrollees ≥ 18 years of age are **medically necessary** when meeting all of the following[8]:

A. Physician-documented severe lung disease or hypoxemia-related symptoms that might be expected to improve with oxygen therapy;
B. The blood gas study or pulse oximetry measurement meets one of the following for Group I or Group II hypoxemia[8]:
   1. Member/enrollee qualifies for Group I by meeting any of the following[8]:
      a. An arterial PO_2 at or below 55 mm Hg, or an arterial oxygen saturation (or pulse oximetry) at or below 88 percent taken at rest (awake), breathing room air[1,8];
      b. An arterial PO_2 at or below 55 mm Hg, or an arterial oxygen saturation (or pulse oximetry) at or below 88 percent, taken during sleep, for a beneficiary who demonstrates an arterial PO_2 at or above 56 mm Hg or an arterial oxygen saturation (or pulse oximetry) at or above 89 percent while awake[8];
      c. A decrease in arterial PO_2 more than 10 mm Hg, or a decrease in arterial oxygen saturation (or pulse oximetry) more than five percent from baseline saturation, taken during sleep and associated with symptoms or signs (e.g., impairment of cognitive processes and nocturnal restlessness or insomnia) reasonably attributable to hypoxemia[8];
      d. An arterial PO_2 at or below 55 mm Hg or an arterial oxygen saturation (or pulse oximetry) at or below 88 percent, taken during exercise for a beneficiary who demonstrates an arterial PO_2 at or above 56 mm Hg or an arterial oxygen saturation (or pulse oximetry) at or above 89 percent during the day while at rest. In this case, supplemental 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[8];
   2. Member/enrollee qualifies for Group II by meeting both of the following[1,8]:
      a. An arterial PO_2 of 56 through 59 mm Hg or an arterial blood oxygen saturation of 89 percent or less at rest (awake), during sleep, or during exercise (as described under Group I criteria)[1,8];
      b. Any of the following[8]:
         i. Dependent edema suggesting congestive heart failure;
         ii. 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);
         iii. Erythrocythemia with a hematocrit greater than 56 percent;
C. The qualifying blood gas study or pulse oximetry measurement was obtained under one of the following conditions[8]:
   1. Performed during an inpatient hospital stay, and the reported test was the one obtained closest to, but no earlier than two days prior to the hospital discharge date;
   2. Not performed during an inpatient hospital stay, and the reported test was performed when the treating practitioner noted signs and symptoms of illness that can be relieved by oxygen treatment in the home;
D. If the request is for a portable oxygen system, both of the following[8]:
   1. The member/enrollee is mobile within the home or community;
   2. The qualifying blood gas study or pulse oximetry measurement was performed while

at rest (awake) or during exercise.

Note: If the only qualifying blood gas study or pulse oximetry measurement was performed during sleep, portable oxygen will be denied as not reasonable and necessary.

II. It is the policy of health plans affiliated with Centene Corporation that reauthorization of oxygen concentrators and oxygen systems for severe lung disease or hypoxemia-related symptoms for members/enrollees ≥ 18 years of age are **medically necessary** when meeting the following[1,7,9;14]:

A. One of the following:
   1. Group I – Documentation supports that the oxygen therapy and oxygen equipment remain reasonable and necessary[14];
   2. Group II - both of the following[14]:
      a. Evaluation and documentation of a repeat qualifying blood gas test by the treating practitioner between the 61st and 90th days after initiation of therapy meets criteria for group I or group II in criteria I.B. above;
      b. A new signed written order by the treating practitioner.

B. If the request is for a portable oxygen system, both of the following[7]:
   1. The member/enrollee is mobile within the home or community;
   2. The qualifying blood gas study or pulse oximetry measurement was performed while at rest (awake) or during exercise.

   Note: If the only qualifying blood gas study or pulse oximetry measurement was performed during sleep, portable oxygen will be denied as not reasonable and necessary.

III. It is the policy of health plans affiliated with Centene Corporation that oxygen concentrators **are not medically necessary** for the following indications[1,8,17]:

A. Angina pectoris in the absence of hypoxemia[8];
B. Breathlessness without cor pulmonale or evidence of hypoxemia[8];
C. Severe peripheral vascular disease resulting in clinically evident desaturation in one or more extremities but in the absence of systemic hypoxemia[1,8];
D. Shortness of breath or dyspnea in a pediatric patient without evidence of hypoxemia;
E. Terminal illnesses that do not affect the ability to breathe.[1,8]

IV. It is the policy of health plans affiliated with Centene Corporation that stationary gaseous oxygen systems (i.e. cylinder of liquid or gaseous oxygen) and related delivery equipment for the treatment of cluster headaches are **medically necessary** when meeting the following:

A. Diagnosis of cluster headache as evidenced by all of the following[7,10,11,12,13,16];
   1. At least five severe to very severe unilateral headache attacks lasting 15 to 180 minutes when untreated;
   2. The headaches are accompanied by at least one of the following:
      a. Ipsilateral conjunctival injection and/or lacrimation;
      b. Ipsilateral nasal congestion and/or rhinorrhea;
      c. Ipsilateral eyelid edema;
      d. Ipsilateral forehead and facial sweating;
      e. Ipsilateral miosis and/or ptosis;
      f. A sense of restlessness or agitation;

3. Frequency of headache attacks occur between one every other day and eight per day.

Background

Oxygenation is the process of oxygen diffusing passively from the alveolus to the pulmonary capillary, where it binds to hemoglobin in red blood cells or dissolves into the plasma.[2] A low partial pressure of oxygen in the blood is termed hypoxemia. Hypoxemia can have multiple causes including hypoventilation, ventilation-perfusion (V/Q) mismatch, right-to-left shunts, diffusion limitation and reduced inspired oxygen tension. Common tests to determine if oxygenation is impaired and at risk of being insufficient include arterial oxygen saturation (SaO_2), arterial oxygen tension (PaO_2), alveolar to arterial (A-a) oxygen gradient, and the PaO_2/fraction of inspired oxygen (FiO_2) ratio.[2]

Indications for continuous long-term oxygen therapy (LTOT) for those with chronic lung disease include[3]:

- Resting arterial oxygen tension (PaO_2) less than or equal to 55 mmHg (7.32 kPa), or a pulse oxygen saturation (SpO_2) less than or equal to 88 percent;
- PaO_2 less than or equal to 59 mmHg (7.85 kPa), or an SpO_2 less than or equal to 89 percent, if there is evidence of cor pulmonale, right heart failure, or erythrocytosis (hematocrit >55 percent);
- PaO_2 of 55 mmHg (7.32 kPa) or lower, or an SpO_2 of 88 percent or lower, during exercise or sleep.

Prescribed oxygen flow rates may vary throughout the day with activity or sleep or during acute exacerbations of disease. For patients with nocturnal oxygen desaturation, clinical evaluation for sleep-disordered breathing utilizing polysomnography is often appropriate.[3]

The American Association for Respiratory Care

According to the American Association for Respiratory Care LTOT in the home or alternate site health care facility is normally indicated for the treatment of hypoxemia and has been shown to have a significant positive impact on hypoxemic patients with chronic obstructive pulmonary disease (COPD). LTOT has also been shown to reduce hospitalizations and lengths of stay. Laboratory indications for LTOT include documented hypoxemia in adults, children, and infants older than 28 days as evidenced by $PaO_2 \leq 55$ mm Hg or $SaO_2 \leq 88\%$ in subjects breathing room air or PaO_2 of 56 to 59 mm Hg or SaO_2 or $SpO_2 \leq 89\%$ in association with specific clinical conditions such as cor pulmonale, congestive heart failure, or erythrocythemia with hematocrit > 56. Some patients may not demonstrate a need for oxygen therapy at rest but will be hypoxemic during ambulation, sleep, or exercise. Oxygen therapy is indicated during these specific activities when the SaO_2 is demonstrated to fall to $\leq 88\%$. The initial need for LTOT is determined by measurement of inadequate arterial blood oxygen tensions and/or saturations and/or the presence of clinical indicators. Ongoing evaluation or reassessment of arterial blood gas tensions and/or saturations by invasive or noninvasive methods may be indicated whenever there is a change in clinical status that may be cardiopulmonary related.[1]

The American Thoracic Society

Per the American Thoracic Society Clinical Practice Guidelines for Home Oxygen Therapy (HOT) in Adults, HOT is recommended for the following:[4]

- For patients with severe resting hypoxemia, the prescription of LTOT to improve survival

is supported by historical trials in patients with COPD;
- The expert panel strongly recommends prescribing oxygen for patients with interstitial lung disease (ILD) with severe resting hypoxemia;
- Existing evidence and panel consensus suggest not prescribing LTOT for patients with COPD with moderate resting hypoxemia;
- This review confirmed scarce and inconclusive data to support the prescription of oxygen in patients who have normoxia at rest but desaturate (sometimes markedly) with exertion;
- Emerging evidence suggests that ambulatory oxygen therapy may improve health-related quality of life in patients with ILD in the short-term but long-term data is needed;
- The panel unanimously agreed that liquid oxygen (LOX) should be offered to active patients on high-flow oxygen;
- Finally, the minimal standard of care for all patients receiving home oxygen therapy must include education and training related to their oxygen equipment, oxygen safety, and self-management.

Coding Implications

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2024, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

HCPCS Codes	Description
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

HCPCS Codes	Description
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 noninvasively
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
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
S8120	Oxygen contents, gaseous, 1 unit equals 1 cubic foot
S8121	Oxygen contents, liquid, 1 unit equals 1 pound

Reviews, Revisions, and Approvals	Revision Date	Approval Date
Policy developed	02/24	02/24
Annual review. Removed criteria I.C. The qualifying blood gas study or pulse oximetry measurement was performed by a physician or by a qualified provider or supplier of laboratory services. Minor edits to background with no impact to criteria. Added CPT E0447 to coding table. References reviewed and updated. Reviewed by external specialist.	11/24	11/24
Annual review. Updated policy statements I and III. to specify that the criteria applies to severe lung disease and hypoxemia-related symptoms; removed parenthetical note regarding cluster headaches in policy statements I. and III. with no impact to criteria. Updated verbiage in Criteria I.B. regarding Group I and Group II hypoxemia for clarity. Updated verbiage in Criteria I.B.1.c. regarding symptoms and signs and examples for clarity. Updated verbiage to include "supplemental" oxygen in Criteria I.B.1.d. for clarity. Updated formatting in Criteria I.D.2. and II.B.2. to include a note with no impact to criteria. Coding updated to include E0446 and descriptions reviewed. References reviewed and	11/25	11/25

Reviews, Revisions, and Approvals	Revision Date	Approval Date
updated. Reviewed by external specialist.		
Policy description updated to note that the applicable NCD, LCD, and LCA do not provide sufficient coverage criteria to consistently determine medical necessity and noted why the criteria in the applicable CMS NCD, LCD, and LCA were supplemented with this policy.	12/25	

References

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Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. "Health Plan" means a healthplan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members/enrollees. This clinical policy is not intended to recommend treatment for members/enrollees. Members/enrollees should consult with their treating physician in connection with diagnosis and treatment decisions.

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Note: For Medicaid members/enrollees, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Note: For Medicare members/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at http://www.cms.gov for additional information.