

Clinical Policy: Hyperbaric Oxygen Therapy (HBOT)

Reference Number: CP.MP.199

Last Review Date: 10/20

[Coding Implications](#)

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

Description

Hyperbaric oxygen therapy (HBOT) is a modality in which the entire body is exposed to oxygen under increased atmospheric pressure. The patient is entirely enclosed in a pressure chamber breathing 100% oxygen at greater than one atmosphere (atm) pressure.^{1,2,3} This policy describes the medical necessity criteria for HBOT.

Policy/Criteria

- I. It is the policy of health plans affiliated with Centene Corporation® that initial authorization of hyperbaric oxygen therapy is **medically necessary** when all of the following criteria apply:
- A. Meets all of the following wound care conditions:
 - 1. No meaningful improvement in wound size (less than 50% improvement in wound size) after 30 days of standard wound care (6 weeks for chronic, refractory osteomyelitis) including:
 - a. Adequate glycemic control (Hgb A1 C <9%) OR If hemoglobin A1C is over 9%, demonstration of at least a 2 point reduction during active wound management;
 - b. Weekly debridement;
 - c. Nutritional treatment of malnutrition;
 - d. Antibiotics for infection;
 - e. Topical wound dressings
 - B. One of the following indications:
 - 1. Chronic refractory osteomyelitis, unresponsive to conventional medical and surgical management meeting all of the following requirement:
 - a. Failure of wound to decrease by at least 50% in size after at least 6 weeks of medical and surgical treatment including all of the following:
 - i. IV antibiotics;
 - ii. Surgical debridement;
 - iii. Imaging that does not support recurrent, acute osteomyelitis;
 - iv. Negative pressure wound therapy (NPWT);
 - 2. Osteoradionecrosis as an adjunct to conventional treatment;
 - 3. Soft tissue radio necrosis as an adjunct to conventional treatment (examples include, radiation cystitis, radiation proctitis, esophagitis);
 - 4. Actinomycosis, only as an adjunct to conventional therapy when the disease process is refractory to antibiotics and surgical treatment;
 - 5. Infected diabetic wounds of the lower extremities in members/enrollees who meet all of the following criteria:
 - a. Type I or type II diabetes with a lower extremity wound due to diabetes;
 - b. Infected wound classified as Wagner grade III or higher;
 - c. Documentation of excisional debridement procedures with wound measurements and appropriate dressings has been provided;

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- d. Member/enrollee has had a nutritional assessment with counseling, including having an albumin/pre-albumin with dietician consultation for those deemed malnourished;
 - e. Member/enrollee has had deep tissue wound cultures to guide antibiotic therapy and an infectious disease consultation for complex infections, when obtainable and if applicable;
 - f. Ankle/branchial index (ABI) is documented and if their ABI less than 0.5, specialty referral for further testing or consider transcutaneous oxygen monitoring (TCOM) to document that adequate oxygenation is achievable with HBOT;
- C. Requested visits do not exceed 15;
 - D. Documentation of ruler measurements of the wound with photographs;
 - E. All requests for HBOT must be submitted for mandatory secondary review with full documentation of above criteria.

II. It is the policy of health plans affiliated with Centene Corporation® that continued authorization of hyperbaric oxygen therapy is **medically necessary** when meeting all of the following:

- A. Documentation of ruler measurements of the wound healing process with photographs;
- B. Requested visits do not exceed 15 visits;
- C. Documentation of adherence to hyperbaric oxygen therapy;
- D. Documentation of evidence of improvement prior to and at 15 visits;
- E. All requests for HBOT must be submitted for mandatory secondary review with full documentation of above criteria.

III. It is the policy of health plans affiliated with Centene Corporation® that hyperbaric oxygen therapy is **not medically necessary** for the following diagnoses:

- A. Cutaneous, decubitus, and stasis ulcers;
- B. Chronic peripheral vascular insufficiency;
- C. Anaerobic septicemia and infection other than clostridial;
- D. Skin burns (thermal);
- E. Senility;
- F. Myocardial infarction;
- G. Cardiogenic shock;
- H. Sickle cell anemia;
- I. Acute thermal and chemical pulmonary damage, i.e., smoke inhalation with pulmonary insufficiency;
- J. Acute or chronic cerebral vascular insufficiency;
- K. Hepatic necrosis;
- L. Aerobic septicemia;
- M. Nonvascular causes of chronic brain syndrome (Pick's disease, Alzheimer's disease, Korsakoff's disease);
- N. Tetanus;
- O. Systemic aerobic infection;
- P. Organ transplantation;
- Q. Organ storage;
- R. Pulmonary emphysema;

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- S. Exceptional blood loss anemia;
- T. Multiple Sclerosis;
- U. Arthritic Diseases;
- V. Acute cerebral edema.

IV. It is the policy of health plans affiliated with Centene Corporation® that hyperbaric oxygen therapy is **not medically necessary** in the presence of the following contraindications:

- A. Pneumothorax;
- B. Pregnancy, except in the case of carbon monoxide poisoning for which it is specifically indicated on an emergent basis;
- C. Simultaneous use of doxorubicin or bleomycin.

V. It is the policy of health plans affiliated with Centene Corporation® that hyperbaric oxygen therapy requests for these following conditions may be denied as not medically necessary. Such conditions can be treated with standard wound care [including topical dressings, nutritional support and wound negative pressure (NPWT)] treatment after the initial period of hospitalization unless there is evidence of graft ischemia or threatened flap:

- A. Gas gangrene;
- B. Acute peripheral ischemia (including reperfusion conditions of arterial embolism and thrombosis, reimplantation and/or crush injuries of the extremities);
- C. Progressive necrotizing fasciitis;
- D. Acute arterial Air or Gas Embolism;
- E. Carbon monoxide poisoning;
- F. Cyanide poisoning;
- G. Decompression illness;
- H. Preparation and preservation of compromised skin grafts (not for primary management of wounds).

Background

Hyperbaric Oxygen Therapy serves four primary functions: ^{2,3}

1. It increases the concentration of dissolved oxygen in the blood, which augments oxygenation to all parts of the body
2. It replaces inert gas in the bloodstream with oxygen, which is then metabolized by the body
3. It may stimulate the formation of a collagen matrix and angiogenesis
4. It acts as a bactericide for certain susceptible bacteria.

Hyperbaric oxygen therapy is used to treat a variety of diagnoses in both the inpatient and outpatient setting. Some of the most common conditions treated in the outpatient wound clinic setting are: ^{2,3}

- Chronic Refractory Osteomyelitis
- Osteoradionecrosis and Soft Tissue Radiation Injury
- Actinomycosis
- Diabetic Wounds

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Standard wound care in patients with diabetes involves a multifaceted approach. It is important that the following tenets of care be addressed and documented in clinical notes:

1. Tight glycemic control
 - a. Achieve a hemoglobin A1C reading of at least less than 9%, ideally as low as possible without adverse effects
 - b. If hemoglobin A1C is over 9%, demonstration of at least a 2 point reduction during active wound management
2. Optimized vascular status
 - a. Measure and periodically follow ABI (Ankle/Branchial Index)
 - b. Consideration for referral for revascularization for low ABI
 - c. If not a candidate for vascular intervention, non-invasive monitoring should demonstrate augmentation of tissue oxygen saturation with supplemental oxygen (transcutaneous oxygen measurement (TCOM), for example)
3. Aggressive offloading
 - a. When not contraindicated, total contact casting is considered the gold standard
 - b. Consider orthotist or podiatrist for patients failing alternate methods
4. Active wound management
 - a. Excisional debridement of devitalized tissue at regular intervals
 - b. Exact measurements of the area and volume of the wound performed and documented regularly
 - c. Maintain a clean, moist wound bed of granulation tissue
5. Infection management
 - a. Documentation of duration, route of administration and name of prior antibiotic therapy
 - b. Any relevant culture and sensitivity tests (ideally from infected tissue as opposed to a standard wound swab) well-documented
 - c. Inclusion or notation of any infectious disease consultations for complex cases
6. Nutrition
 - a. Counseling patients regarding the importance of protein in wound healing
 - b. Objective measurement of improvement in patients with documented malnutrition, eg. pre-albumin/albumin

Wagner Ulcer Classification System⁴

Grade

- 0 - No open lesions; may have deformity or cellulitis
- 1 - Superficial diabetic ulcer (partial or full thickness)
- 2 - Ulcer extension to ligament, tendon, joint capsule, or deep fascia without abscess or osteomyelitis
- 3 - Deep ulcer with abscess, osteomyelitis, or joint sepsis
- 4 - Gangrene localized to portion of forefoot or heel
- 5 - Extensive gangrenous involvement of the entire foot

Coding Implications

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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.

CPT®*	Description
99183	Physician or other qualified health care professional attendance and supervision of hyperbaric oxygen therapy, per session (Professional Component Only)

HCPCS®*	Description
A4575	Topical hyperbaric oxygen chamber, disposable (Not covered)
E0446	Topical oxygen delivery system, not otherwise specified, includes all supplies and accessories (not covered)
G0277	Hyperbaric oxygen under pressure, full body chamber, per 30 minute interval (Technical Component Only)

Reviews, Revisions, and Approvals	Date	Approval Date
Original approval date		02/19
Minor wording changes with no clinical significance. Replaced all instances of “member” with “member/enrollee.” Policy moved to Centene template and renumbered to CP.MP.199 from HS-204. References reviewed and updated.	10/20	10/20

References

1. National coverage determination for hyperbaric oxygen Therapy (20.29). Centers for Medicare and Medicaid Services Web site. <http://www.cms.hhs.gov/mcd/search.asp>. Published December 18, 2017. Accessed October 8, 2020.
2. Local coverage determination for hyperbaric oxygen (HBO) Therapy (L36504). Centers for Medicare and Medicaid Services Web site. <http://www.cms.hhs.gov/mcd/search.asp>. Published May 30, 2018 (retired August 27, 2020). Accessed October 8, 2020.
3. Local coverage determination for hyperbaric oxygen (HBO) Therapy (L35021). Centers for Medicare and Medicaid Services Web site. <http://www.cms.hhs.gov/mcd/search.asp>. Published October 10, 2018 (retired August 27, 2020). Accessed October 8, 2020.
4. Fryberg, R. Diabetic foot ulcers: pathogenesis and management. *Am Fam Physician*. 2002 Nov 1;66(9):1655-1663.
5. Mechem CC, Manaker S. Hyperbaric oxygen therapy. UpToDate website. www.uptodate.com. Published January 22, 2020. Accessed October 8, 2020.

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

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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 health plan 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.

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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

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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.

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