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Hyperbaric Oxygen Therapy

Policy Number: HS-032

Original Effective Date: 7/17/2008

Revised Date(s): 8/13/2009; 8/20/2010;
8/2/2011

DISCLAIMER

The Clinical Coverage Guideline is intended to supplement certain standard WellCare benefit plans. The terms of a member's particular Benefit Plan, Evidence of Coverage, Certificate of Coverage, etc., may differ significantly from this Coverage Position. For example, a member's benefit plan may contain specific exclusions related to the topic addressed in this Clinical Coverage Guideline. When a conflict exists between the two documents, the Member's Benefit Plan always supersedes the information contained in the Clinical Coverage Guideline. Additionally, Clinical Coverage Guidelines relate exclusively to the administration of health benefit plans and are NOT recommendations for treatment, nor should they be used as treatment guidelines. The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

APPLICATION STATEMENT

The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

BACKGROUND

Hyperbaric Oxygen (HBO) Therapy is a medical treatment in which the patient is entirely enclosed in a pressure chamber breathing 100% oxygen (O₂) at a pressure greater than one atmosphere (atm). Either a monoplace chamber pressurized with pure O₂ or a larger multiplace chamber pressurized with compressed air where the patient receives pure O₂ by mask, head tent, or endotracheal tube may be used.

A hyperbaric oxygen chamber (whether single or multiple chamber [i.e., created to hold several people]) is a device intended to increase the environmental oxygen pressure to promote the movement of oxygen from the environment to a patient's tissues by means of pressurization that is greater than atmospheric pressure. Complications from this therapy can be minimized if pressures within the chamber remain below three times the normal atmospheric pressure and sessions last no longer than two hours.

The safety and efficacy of HBO therapy has been demonstrated for numerous conditions in evidence-based, peer-reviewed journals, consensus guidelines and numerous textbooks. HBO therapy is the standard of care in the primary treatment of acute carbon monoxide poisoning, arterial gas embolism, and decompression sickness. Through the forced exchange of oxygen at the plasma levels, tissue function can be sustained.

Wagner Scale

Grade 0: No ulcer in a high risk foot.

Grade 1: Superficial ulcer involving the full skin thickness but not underlying tissues.

Grade 2: Deep ulcer, penetrating down to ligaments and muscle, but no bone involvement or abscess formation.

Grade 3: Deep ulcer with cellulitis or abscess formation, often with osteomyelitis.

Grade 4: Localized gangrene.

Grade 5: Extensive gangrene involving the whole foot.

POSITION STATEMENT

Hyperbaric oxygen (HBO) therapy **is considered medically necessary** for the following indications:

- Acute carbon monoxide intoxication,
- Decompression illness,
- Gas embolism,
- Gas gangrene,
- Acute traumatic peripheral ischemia. HBO therapy is a valuable adjunctive treatment to be used in combination with accepted standard therapeutic measures when loss of function, limb, or life is threatened.
- Crush injuries and suturing of severed limbs. As in indication #5, HBO therapy would be an adjunctive treatment when loss of function, limb, or life is threatened.
- Necrotizing infections (necrotizing fasciitis),
- Acute peripheral arterial insufficiency,
- Preparation and preservation of compromised skin grafts (not for primary management of wounds),
- Refractory osteomyelitis, unresponsive to conventional medical and surgical management,
- Osteoradionecrosis as an adjunct to conventional treatment,
- Soft tissue radionecrosis as an adjunct to conventional treatment,
- Cyanide poisoning,
- Actinomycosis, only as an adjunct to conventional therapy when the disease process is refractory to anti-fungal medication and surgical treatment,
- Diabetic with wounds of the lower extremities in patients who meet the following three criteria:

- Patient has a wound classified as Wagner grade III or higher (see scale below); and
- Patient has failed an adequate course of standard wound therapy.

The use of HBO therapy is covered as adjunctive therapy only after there are no measurable signs of healing for at least 30 –days of treatment with standard wound therapy and must be used in addition to standard wound care. Standard wound care in patients with diabetic wounds includes: assessment of a patient’s vascular status and correction of any vascular problems in the affected limb if possible, optimization of nutritional status, optimization of glucose control, debridement by any means to remove devitalized tissue, maintenance of a clean, moist bed of granulation tissue with appropriate moist dressings, appropriate off-loading, and necessary treatment to resolve any infection that might be present. Failure to respond to standard wound care occurs when there are no measurable signs of healing for at least 30 consecutive days. Wounds must be evaluated at least every 30 days during administration of HBO therapy. Continued treatment with HBO therapy is not covered if measurable signs of healing have not been demonstrated within any 30-day period of treatment.

Hyperbaric oxygen therapy **may be considered experimental and investigational and NOT a covered benefit** for the following indications:

- Cutaneous, decubitus, and stasis ulcers.
- Chronic peripheral vascular insufficiency.
- Anaerobic septicemia and infection other than clostridial.
- Skin burns (thermal).
- Senility.
- Myocardial infarction.
- Cardiogenic shock.
- Sickle cell anemia.
- Acute thermal and chemical pulmonary damage, i.e., smoke inhalation with pulmonary insufficiency.
- Acute or chronic cerebral vascular insufficiency.
- Hepatic necrosis.
- Aerobic septicemia.
- Nonvascular causes of chronic brain syndrome (Pick’s disease, Alzheimer’s disease, Korsakoff’s disease).
- Tetanus.
- Systemic aerobic infection.
- Organ transplantation.
- Organ storage.
- Pulmonary emphysema.
- Exceptional blood loss anemia.
- Multiple Sclerosis.
- Arthritic Diseases.
- Acute cerebral edema.
- Autism

CODING

Covered CPT® Codes

99183 Physician attendance and supervision of hyperbaric oxygen therapy, per session

Covered ICD-9 Procedure Codes

- 93.59 Hyperbaric Oxygenation of Wound
- 93.95 Hyperbaric Oxygenation

Covered HCPCS Level II ® Code

- C1300 Hyperbaric oxygen under pressure, full body chamber, per 30 minute interval

Non Covered HCPCS Level II ® Code

- A4575 Topical hyperbaric oxygen chamber, disposable

Covered ICD-9 Diagnosis Codes

- 039.0 - 039.9 Actinomycotic infections (See specific indication above.)
- 040.0 Gas gangrene [Clostridial myositis and myonecrosis]
- 250.70 - 250.71 Diabetes with peripheral circulatory disorders [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
- 250.80 - 250.81 Diabetes with other specified manifestations [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
- 440.20 - 440.9 Atherosclerosis of native arteries and bypass graft of extremities [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
- 443.0 - 443.1 Other peripheral vascular disease [acute peripheral arterial insufficiency]
- 443.81 - 443.9 Other specified peripheral vascular diseases [acute peripheral arterial insufficiency]
- 444.21 - 444.22 Arterial embolism of the extremities [acute peripheral arterial insufficiency]
- 444.81 Arterial embolism and thrombosis of the iliac artery [acute peripheral arterial insufficiency]
- 454.0 Varicose veins of lower extremities with ulcer [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
- 454.2 Varicose veins of lower extremities with ulcer and inflammation [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
- 526.4 Inflammatory conditions of the jaws [radiation necrosis of jaw]
- 526.89 Other specified diseases of jaw [prophylactic pre- and post-treatment for members undergoing dental surgery of a radiated jaw] [osteoradionecrosis]
- 728.86 Necrotizing fasciitis
- 730.10 - 730.19 Chronic osteomyelitis [unresponsive to conventional medical and surgical management]
- 885.0 - 887.7 Traumatic amputation thumb, finger(s), arm and hand [when loss of function or life is threatened and HBOT is used in combination with standard therapy]

- 895.0 - 897.7** Traumatic amputation toe(s), foot, leg(s) [when loss of function or life is threatened and HBOT is used in combination with standard therapy]
- 902.53** Injury to the iliac artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 903.01** Injury to axillary artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 903.4** Injury to palmar artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 903.8** Injury to other specified blood vessels of upper extremity [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 904.0** Injury to common femoral artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 904.1** Injury to superficial femoral artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 904.41** Injury to popliteal artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 904.51** Injury to anterior tibial artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 904.53** Injury to posterior tibial artery [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 904.7** Injury to other specified blood vessels of lower extremity [acute peripheral ischemia when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 925.1 - 929.9** Crush injuries [when loss of function, limb, or life is threatened and HBOT is used in combination with standard therapy]
- 951.5** Injury to acoustic nerve [acoustic trauma when HBOT is initiated within 3 months after onset]
- 958.0** Air embolism [acute]
- 958.90 - 959.99** Compartment syndrome
- 986** Toxic effect of carbon monoxide [acute]
- 987.7** Toxic effect of hydrocyanic acid gas [with co-existing carbon monoxide poisoning]
- 989.0** Toxic effect of hydrocyanic acid and cyanides [with co-existing carbon monoxide poisoning]
- 990** Effects of radiation, unspecified [radiation necrosis (osteoradionecrosis, myoradionecrosis, brain radionecrosis, and other soft tissue radiation necrosis) or proctitis] [not covered for radiation induced cystitis, myelitis, enteritis, or optic nerve injury]
- 993.3** Caisson disease [decompression illness]
- 996.52** Mechanical complications due to graft of other tissue, not elsewhere classified [compromised skin grafts and flaps]
- 996.55** Mechanical complications due to artificial skin graft and decellularized allodermis [compromised skin grafts and flaps]
- 996.69** Infection and inflammatory reaction due to other internal prosthetic device, implant, and graft [compromised skin grafts and flaps]
- 996.79** Other complications due to other internal prosthetic device, implant, and graft [compromised skin grafts and flaps]
- 998.59** Other postoperative infection [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
- 998.83** Non-healing surgical wound [non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]

Non Covered ICD-9 Diagnosis codes This list may not be all inclusive.

003.21	Salmonella meningitis
008.45	Clostridium difficile [intra-abdominal abscess, pseudomembranous colitis (antibiotic-induced colitis)]
013.0	Tuberculous meningitis
030.0	Lepromatous (type L) [leprosy]
036.0	Meningococcal meningitis
037	Tetanus
038.3	Septicemia due to anaerobes [<u>progressive necrotizing soft tissue anaerobic infections</u>]
038.0, 038.2, 038.4 - 038.9	Septicemia [except anaerobic infection]
042	Human immunodeficiency virus [HIV] disease
088.81	Lyme disease
090.42	Congenital syphilitic meningitis
091.81	Acute syphilitic meningitis (secondary)
094.2	Syphilitic meningitis
098.82	Gonococcal meningitis
100.81	Leptospiral meningitis (aseptic)
110.0 – 118	Mycoses
348.5	Cerebral edema [acute]
282.62	Hb-SS disease with mention of crisis [sickle cell crisis]
290.0 - 290.0	Dementias [cognitive impairment]
294.8	Other persistent mental disorders due to conditions classified elsewhere [dementia NOS] [cognitive impairment]
320.0 - 322.9	Meningitis- bacterial, due to other organisms, and of unspecified cause
340	Multiple sclerosis
410.00 – 412	Myocardial infarction
433.00 - 434.9	Occlusion and stenosis of precerebral and cerebral arteries [acute or chronic cerebrovascular insufficiency/accident including thrombotic or embolic stroke]
435.0 - 435.9	Transient cerebral ischemia [acute or chronic cerebrovascular insufficiency]
436	Acute, but ill-defined, cerebrovascular disease [acute or chronic cerebrovascular insufficiency/accident including thrombotic or embolic stroke]
437.0 - 437.9	Other and ill-defined, cerebrovascular disease [acute or chronic cerebrovascular insufficiency/accident including thrombotic or embolic stroke]
459.81	Venous (peripheral) insufficiency, unspecified [<u>venous stasis ulcer</u> - non-healing infected deep ulcerations (reaching tendons or bone) of the lower extremity unresponsive to at least 1 month of meticulous wound care, including aggressive debridement, maximal antibiotic therapy, tight glycemic control, and appropriate treatment of arterial insufficiency, including revascularization if necessary]
492.8	Pulmonary Emphysema
506.0 - 506.9	Respiratory conditions due to chemical fumes and vapors; Acute thermal and chemical pulmonary damage, i.e., smoke inhalation (e.g., carbon tetrachloride, hydrogen sulfide) with pulmonary insufficiency
508.0 - 508.9	Respiratory conditions due to other and unspecified external agents [Acute thermal and chemical pulmonary damage, i.e., smoke inhalation (e.g., carbon tetrachloride, hydrogen sulfide) with pulmonary insufficiency]
570	Acute and subacute necrosis of liver [hepatic]
711.00 - 716.99	Arthropathies
785.51	Cardiogenic shock
797	Senility without mention of psychosis [cognitive impairment]
941.00 - 946.59	Burns of face, head, neck, trunk, upper limb, wrist and hand, lower limb, and multiple specified sites [skin, thermal]

- 987.0 - 987.6** Toxic effects of other gases, fumes, or vapors [other than carbon monoxide] [Acute thermal and chemical pulmonary damage, i.e., smoke inhalation (e.g., carbon tetrachloride, hydrogen sulfide) with pulmonary insufficiency]
- V42.0 - V43.89** Organ or tissue replacement by transplant or other means [organ transplant or storage]
- V49.83** Awaiting organ transplant status [organ transplant or storage]

*Current Procedural Terminology (CPT) 2010 American Medical Association: Chicago, IL.®©

REFERENCES

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2. Hayes Directory. Hyperbaric Oxygen Therapy for Radiation Injuries. December 10, 2003.
3. Hayes Directory. Topical Oxygen Therapy for Chronic Wound Healing. January 8, 2002. ARCHIVED-2008.
4. Hayes Directory. Hyperbaric Oxygen Therapy for Autism. October 5, 2007.

Government Agencies, Professional and Medical Organizations

1. Centers for Medicare and Medicaid Services. National Coverage Determination for Hyperbaric oxygen Therapy (20.29). June 19, 2006.
2. First Coast Service Options, Inc. Local Coverage Determination for Hyperbaric Oxygen Therapy (HBO Therapy) (L13159). April 11, 2006.

Other

1. UnitedHealthcare Technology Assessment. Hyperbaric Oxygen Therapy. February 19, 2004.

HISTORY AND REVISIONS

Date	Action
12/1/2011	<ul style="list-style-type: none">• New template design approved by MPC.
8/2/2011	<ul style="list-style-type: none">• Approved by MPC. No changes.