

Local Coverage Determination (LCD) for Hyperbaric Oxygen (HBO) Therapy (L34794)

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Contractor Information

Contractor Name

Novitas Solutions, Inc.

Contractor Numbers

04911, 07101, 07102, 07201, 07202, 07301, 07302, 04111, 04112, 04211, 04212, 04311, 04312, 04411, 04412

Contractor Type

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LCD Title

Hyperbaric Oxygen (HBO) Therapy

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Jurisdictions

Arkansas, Louisiana, Mississippi, Colorado, Texas, Oklahoma, New Mexico

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For services performed on or after 07/24/2014

Revision Effective Date

For services performed on or after 07/24/2014

Revision Ending Date

N/A

Retirement Date

N/A

Notice Period Start Date

06/05/2014

Notice Period End Date

07/23/2014

CMS National Coverage Policy

Title XVIII of the Social Security Act, Section 1862(a)(1)(A) states that no Medicare payment shall be made for items or services which are not reasonable and necessary for the diagnosis or treatment of illness or injury.

Title XVIII of the Social Security Act, Section 1862(a)(7). This section excludes routine physical examinations.

Title XVIII of the Social Security Act, Section 1833(e) states that no payment shall be made to any provider for any claim that lacks the necessary information to process the claim.

Code of Federal Regulations, Title 42, Chapter IV, Subchapter B, Part 410, Subpart B, Section 410.27(f), 410.26(a)(2) and 410.32(b)(3)(11).

CMS Internet-Only Manual Publication 100-02, Chapter 15, Section 60. Incident to a physician's professional Service.

CMS Internet-Only Manual Publication 100-02, Chapter 6, Section 10. Outpatient Hospital Services Incident to a Physician's Service.

CMS Internet-Only Manual Publication 100-03, Chapter 1, Section 20.29.

CMS Internet-Only Manual Publication 100-04, Chapter 32, Section 30.

Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.

Coverage Guidance**Coverage Indications, Limitations and/or Medical Necessity**

Compliance with the provisions in this policy may be monitored and addressed through post payment data analysis and subsequent medical review audits.

Notice: It is not appropriate to bill Medicare for services that are not covered (as described by this entire LCD) as if they are covered. When billing for non-covered services, use the appropriate modifier.

Benefit Category

Hyperbaric oxygen therapy (HBOT) is subject to a Centers for Medicare and Medicaid Services (CMS) National Coverage Determination (NCD 20.29). The following coverage provisions contained in the NCD are included here for convenient reference only. The local provisions included in this LCD do not restrict, expand, or otherwise modify national coverage policy. The local provisions included in this LCD delineate standards of medical practice expected for reimbursement of HBOT as required per Medicare statute.

National Coverage Provisions

NCD 20.29 defines coverable HBO therapy as that administered in a chamber (including the one man unit) in which the entire body is exposed to oxygen under increased atmospheric pressure. Topical application of oxygen, including single limb treatment, submersion or any other limited application of oxygen therapy does not constitute hyperbaric oxygen therapy and does not meet the criteria for coverage under Medicare.

Covered 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 the previous conditions, HBO therapy would be an adjunctive treatment when loss of function, limb or life is threatened.
- Progressive necrotizing infections (necrotizing fasciitis).
- Acute peripheral arterial insufficiency.
- Preparation and preservation of compromised skin grafts (not for primary management of wounds).
- Chronic 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 antibiotics and surgical treatment.
- Diabetic wounds of the lower extremities in patients who meet the following three criteria:
 - Patient has type I or type II diabetes and has a lower extremity wound that is due to diabetes;
 - Patient has a wound classified as Wagner grade III or higher; 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.

Noncovered Conditions

All other indications not specified above are non-covered. Specifically non-covered indications include the following:

- 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.

Local Coverage Provisions

Conditions marked with ** are covered only when therapy is initiated in the inpatient setting, due to the dire nature and concomitant medical issues related to the precipitating injury. HBO treatments are covered in the post-acute hospital care setting only when the patient no longer requires inpatient level of care for sequelae of his injuries and benefit of continued HBO treatment has been established by published evidence as reasonable and necessary.

****Acute carbon monoxide intoxication (ICD-9-CM diagnosis code 986):**

Acute carbon monoxide intoxication induces hypoxic stress. The cardiac and central nervous systems are the most susceptible to injury from carbon monoxide with carboxyhemoglobin levels above 25%. Effects are potentially greater on the unborn fetus. The administration of supplemental oxygen is essential treatment. Hyperbaric oxygen causes a higher rate of dissociation of carbon monoxide from hemoglobin than can occur when breathing pure 100% oxygen at sea level pressure. The chamber compressions should be between 2.5 and 3.0 ATA. It is not uncommon in patients with persistent neurological dysfunction to require subsequent treatments within six to eight hours or until carboxyhemoglobin levels are stable below 5%. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure.

****Cyanide poisoning (ICD-9-CM diagnosis codes 987.7 and 989.0):**

Cyanide poisoning carries a high risk of mortality and is usually associated with concomitant injury. Victims of smoke inhalation frequently suffer from both carbon monoxide and cyanide poisoning in addition to other trauma. The traditional antidote for cyanide poisoning is the infusion of sodium nitrite. This treatment can potentially impair the oxygen-carrying capacity of hemoglobin. HBO as an adjunct therapy adds the benefit of increased plasma oxygen tension. The benefit of HBO therapy for the pulmonary injury related to smoke inhalation remains experimental. The HBO treatment protocol is to administer oxygen at 2.5 to 3.0 ATA for up to 120 minutes during the initial treatment. Most patients with combination cyanide and carbon monoxide poisoning will receive only one treatment. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure.

****Decompression illness (ICD-9-CM diagnosis codes 993.2 and 993.3):**

Decompression illness arises from the formation of gas bubbles in tissue or blood in volumes sufficient enough to interfere with the function of an organ or to cause alteration in sensation. The cause of this enucleated gas is rapid decompression during ascent. The clinical manifestations range from skin eruptions, intense musculoskeletal pain, profound neurologic dysfunction, respiratory and circulatory compromise, shock and death. Treatment of choice for decompression illness is HBO therapy immediately upon recognition of the condition. The result is immediate reduction in the volume of bubbles. The treatment prescription is highly variable and case-specific. The depths could range between 60 to 165 feet of seawater for durations of 1.5 to more than 14 hours. The patient may or may not require repeat dives. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure. Insufficient evidence exists to support hyperbaric therapy past the acute episode period for symptoms of ongoing musculoskeletal pain, skin lesions or other forms of non-life-threatening sequelae.

****Gas embolism (ICD-9-CM diagnosis codes 958.0 and 999.1):**

Gas embolism occurs when gases enter the venous or arterial vasculature embolizing in a large enough volume to compromise the function of an organ or body part, and results in ischemia to the affected area. Air embolism may occur as a result of surgical procedures (e.g., cardiovascular interventions, orthopedic manipulation or endoscopies, intravascular device malfunction or penetrating trauma). It is most effective when initiated immediately if allowed by the patient's condition (does not interfere with surgical or critical care of the fostering injury). Therapy is directed toward reducing the volume of gas bubbles and increasing the diffusion gradient of the embolized gas. Treatment modalities range from high-pressure to low-pressure mixed gas dives. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure. Outcome of treatment should be monitored in the acute injury period. There is no data to suggest ongoing treatment benefit post resolution of the acute injury or event.

****Gas gangrene (ICD-9-CM diagnosis code 040.0):**

Gas gangrene or Clostridia myositis and myonecrosis is an acute, rapidly invasive infection of the muscle, its sheath and surrounding tissue caused by the clostridium bacillus, the most common being *clostridium perfringens*. It is characterized by profound toxemia, extensive edema and massive tissue death with the characteristic "crackle" of the involved tissue or radiologic evidence of gas within the tissue. The most prevalent toxin is the alpha-toxin which in itself is hemolytic, tissue-necrotizing and lethal. The diagnosis of gas gangrene is based on clinical findings of overwhelming sepsis with Gram positive bacilli-obtained from tissue fluids and possibly radiographs, visualizing tissue gas.

The onset of gangrene can occur one to several hours after injury and presents with severe and sudden pain at the infected area. The skin overlying the affected area may progress from erythematous to gangrenous blistering with rapidly advancing margins. Hemorrhagic vesicles may be noted containing a thin, sweet-odored exudate. The ischemic non-contractile muscles progress from dark red to pale in color, eventuating in dark, necrotic gelatinous or "stringy" material.

The acute problem in gas gangrene is stopping the rapidly advancing necrosis caused by alpha-toxin. This is inaugurated by surgical debridement and drainage of involved tissue. Adjunct medical therapy including antibiotics, supportive care and HBO therapy continues to limit alpha-toxin production and inhibit further bacterial propagation to the point that the infection is controlled and is continued until the advancement of the disease process has been arrested. HBO treatment should commence as the clinical picture allows as an adjunct to antibiotic therapy and surgery. Initial surgery may be limited to opening the wound with debridement of necrotic tissue performed between HBO treatments when clear demarcation between dead and viable tissue is evident. Expected treatment consists of oxygen administered at 3.0 ATA pressure for 90 minutes, three times in the first 24 hours. Treatment sessions up to twice a day are usual over the ensuing four to seven days as indicated by the wound and the patient's condition. The sooner HBO treatment is initiated, the better the outcome is in terms of tissue and limb salvage. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure.

****Acute Traumatic Peripheral Ischemia (ATPI) (ICD-9-CM diagnosis codes 902.53, 903.1, 903.01, 904.0 and 904.41):**

HBO therapy may be a valuable adjunctive treatment to be used in combination with accepted standard therapeutic measures when loss of function, limb or life is threatened. Acute peripheral ischemia is a condition of profound ischemia occurring suddenly as a result of arterial injury with occlusion of an end artery. The treatment is removal of the obstruction and restoration of flow to the body part. There is no substitute for direct intervention; however, there is credible evidence that end organ improvement occurs with adjunct HBO therapy. The goal of HBO therapy is to enhance oxygen tension at the tissue level to support viability of the restored tissues in response to infection and wound repair,

thereby reducing sequelae of the initial insult. Expected therapy post intervention and restoration of arterial flow is 1.5 hour treatments, 3 times daily for the first 48 hours. Additional limited treatment sessions may be clinically advantageous over the ensuing 48 hours with few sessions indicated past 4-5 days of the injury. HBO therapy has not been shown to be of benefit post occlusion or re-occlusion of the end artery in lieu of revascularization.

****Crush injuries and suturing of severed limbs (ICD-9-CM diagnosis codes 927.00-927.03, 927.09-927.11, 927.20-927.21, 927.8-927.9, 928.00-928.01, 928.10-928.11, 928.20-928.21, 928.3, 928.8-928.9, 929.0, 929.9, 996.90-996.96, and 996.99):**

Crush injury or traumatic amputation with re-attachment of the severed limb results in similar compromise to the extremity or excluded tissue as in acute arterial occlusion with revascularization. HBOT may be a valuable adjunct when used in combination with revascularization, debridement as necessary and accepted measures of limb or tissue restoration. The benefits of HBO therapy for this indication are enhanced oxygenation, edema reduction and reduction of complication rates for infection, non-union and amputation. Treatment expectation is 2-3 times daily for 1-2 days followed by reduced frequency over the ensuing 3-5 days until demarcation is complete.

As in the previous condition, HBO therapy would be an adjunctive treatment when loss of function, limb or life is threatened. The usual treatment schedule is 1.5-hour treatment periods, three times daily for the first 48 hours. Additionally, two 1.5-hour treatment sessions daily for the next 48 hours may be required. On the fifth and sixth days of treatment, one 1.5-hour session would typically be used. At this point in treatment, outcomes of restored perfusion, edema reduction and either demarcation or recovery would be sufficient to guide discontinuing further treatments. Crush Injuries, Acute Arterial Occlusion and Limb Revascularization or Re-attachment are considered emergent conditions requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure.

****Progressive necrotizing infections (necrotizing fasciitis) (ICD-9-CM diagnosis code 728.86):**

The principal treatment for progressive necrotizing infections is surgical debridement and systemic antibiotics. HBO therapy is recommended as an adjunct only in those settings where mortality and morbidity are expected to be high despite aggressive standard treatment of the necrotizing infections. This condition is a relatively rare infection. It is usually a result of a group A streptococcal infection beginning with severe or extensive cellulitis that spreads to involve the superficial and deep fascia, producing thrombosis of the subcutaneous vessels and gangrene of the underlying tissues. A cutaneous lesion usually serves as a portal of entry for the infection, but sometimes no such lesion is found. It may be confused with clostridia infection though seldom produces gas in the tissues. Numerous bacterial types may produce bullous lesions with foul or fermented aroma. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure.

****Acute Peripheral Arterial Insufficiency (ICD-9-CM diagnosis codes 444.21, 444.22 and 444.81):**

Acute peripheral arterial insufficiency is defined as the sudden occlusion of a major artery in an extremity such as the iliac, popliteal or brachial artery (e.g., saddle embolus). Emergent surgery is the treatment of choice. The role of HBO therapy is to enhance oxygen at the tissue level to support viability until a definitive procedure can be performed (e.g., surgery). HBO therapy should never replace or delay revascularization but may be beneficial post revascularization to enhance oxygen delivery, reducing tissue edema and enhancing phagocytosis to deter complications of infection, thereby enhancing limb salvage. This is an emergent condition requiring the physician to be **immediately** available to furnish assistance and direction throughout the performance of the procedure.

Arterial insufficiency ulcers may be treated with HBO therapy if they are residual or persist after reconstructive surgery

has restored large vessel function with documented improvement of perfusion. HBO therapy is not indicated for chronic arterial or ischemic ulcers without documented revascularization and improved perfusion.

Preparation and preservation of compromised skin grafts (ICD-9-CM diagnosis code 996.52; excludes artificial skin):

Preservation of compromised skin grafts and flap salvage utilizes HBO therapy in cases where hypoxia or decrease perfusion has compromised graft viability. This indication is not for primary management of wounds, nor for skin grafting or tissue coverage procedures of ischemic ulcers where pre-operative therapy has shown no improvement. It is not unusual to receive treatments twice per day at a pressure of 2.0 to 2.5 ATA lasting from 90-120 minutes for 4-5 days until graft viability or stability can be determined. When the graft or flap appears stable, treatments are reduced to daily for no longer than 7 additional days.

NOTE: Medicare coverage does not apply to artificial or allogeneic skin substitutes (CPTs - Cellular and/or Tissue Based Products) for wound coverage.

Medicare coverage does not apply to the initial preparation of the body site for a graft.

HBO therapy is not necessary for normal, uncompromised skin grafts or flaps or for primary management of wounds or ulcers.

Chronic refractory osteomyelitis, unresponsive to conventional medical and surgical management (ICD-9-CM diagnosis codes 730.10-730.19):

HBO is an adjunctive therapy for chronic refractory osteomyelitis that persists or recurs following treatment with primary or first-line interventions. Primary/first-line interventions include antibiotics, drainage, debridement, and immobilization of the affected extremity and surgery. The hallmarks of chronic refractory osteomyelitis include a nidus of infected dead or sclerotic bone, an ischemic soft tissue envelope and a refractory clinical course (defined as failure after standard surgical debridement and at least six weeks of appropriate antibiotic therapy). HBO is not to be used alone but as an adjunctive therapy in combination with antibiotics. Antibiotics are chosen on the basis of culture and sensitivity studies. HBO therapy can elevate the oxygen tensions found in infected bone to normal to above-normal levels. This mechanism enhances phagocytosis and possibly augments the efficacy of certain antibiotics. Osteoclast function of removing necrotic bone is improved with increased oxygen tension environment provided by HBO treatments delivered at a pressure of 2.0 to 2.5 ATA for duration of 90-120 minutes. It is not unusual to receive daily treatments following major surgical debridement. The number of treatments required varies on an individual basis but is not expected to require greater than 30. Medicare Parts A and B may cover the use of HBO only for chronic refractory osteomyelitis that has been demonstrated to be unresponsive to conventional medical and surgical management.

Note: Payment for extended use of HBO therapy for chronic osteomyelitis may be considered upon individual consideration.

Osteoradionecrosis as an adjunct to conventional treatment (ICD-9-CM diagnosis code 526.89). Soft tissue radionecrosis as an adjunct to conventional treatment (ICD-9-CM diagnosis codes 909.2 and 990):

HBO use in the treatment of osteoradionecrosis and soft tissue radionecrosis is one part of an overall plan of care. Plan of care is debridement or resection of non-viable tissues in conjunction with antibiotic therapy as clinically indicated. Soft tissue flap reconstruction and bone grafting may also be indicated. The goal of HBO treatment is to increase the oxygen tension in both hypoxic bone and tissue to stimulate growth in functioning capillaries, fibroblastic proliferation and collagen synthesis as well as facilitate phagocytosis of dead tissue and bone. The recommended daily treatment lasts 90-120 minutes at 2.0 to 2.5 ATA. The duration of HBO therapy is highly individualized and is not expected to

exceed 30 sessions.

Note: *Payment for extended use of HBO therapy for osteoradionecrosis and soft tissue radionecrosis may be considered upon individual consideration.*

Actinomycosis as an adjunct to conventional therapy when the disease process is refractory to antibiotics and surgical treatment (ICD-9-CM diagnosis codes 039.0-039.4, 039.8 and 039.9):

Actinomycosis is a bacterial infection caused by *Actinomyces Israeli*. Its symptoms include slow-growing granulomas that later break down and discharge viscid pus containing minute yellowish granules. The treatment includes prolonged administration of appropriate antibiotics with surgical incision and draining of accessible lesions. Only after the disease process has been shown refractory to antibiotics and surgery will HBO therapy be covered by Medicare.

Diabetic wounds of the lower extremities (ICD-9-CM codes for diabetic complications (250.70-250.73 or 250.80-250.83) must be listed in addition to a covered wound diagnosis code (707.10-707.15 or 707.19) to indicate this condition.

See NCD 20.29 for coverage limitations stated earlier in this LCD for patients with diabetic lower extremity wounds. The NCD criteria are not subject to contractor modification or discretion.

Local coverage provisions for HBO Therapy include the following:

- Measurable signs of healing which include:
 - Decrease in margin size or depth of the wound
 - Formation of healthy granulation tissue (NOT reactive mounds or polyps of granulation tissue)
 - Epithelial growth or advancing margins of epithelium
- Debridement of osteomyelitic bone underlying a chronic ulcer or malperforans ulcer includes surgical debridement/excision of the infected nidus of bone
- Medicare does not expect to see Evaluation and Management (E/M) services reported by the HBOT supervising physician or qualified non-physician practitioner on the same day as HBOT. Routine wound assessment, wound monitoring, and redressing of the wound, in addition to an assessment of the patient's cardiopulmonary stability and general clinical condition prior to the initiation of the therapy is an integral part of the HBO treatment. These services are included in payment for physician supervision of HBO services (99183) and are not to be reported separately as an E/M service. Generally, Medicare expects E/M services to be reported separately only when appropriately documented and reasonable and necessary for unrelated or underlying conditions or for complications of HBO therapy.
- The referring or treating physician must establish a diagnosis prior to the initiation of HBO therapy.
- Continued HBO therapy without demonstrated and documented evidence of effectiveness is not medically reasonable and necessary.
- HBO therapy is not covered when used in lieu of primary standard of care therapeutic measures.
- Treatment duration and frequency of HBOT vary depending on the patient's condition and response. In order to be considered medically reasonable and necessary, HBOT must be reported for durations and at frequencies that are appropriate for the patient's care and consistent with literature evidence and accepted standards of HBO care.

Treatment duration in excess of 2 months or 30 treatments, regardless of the patient's diagnosed condition, may be subject to prepayment medical review.

- Hyperbaric Oxygen Therapy remains the urgent treatment of choice for decompression sickness and arterial gas embolism. Both of these conditions require critical multiple specialty diagnostic and therapeutic interventions in addition to HBOT and HBO physician monitoring of treatment.
- No payment will be allowed for HBOT without documentation that a trained emergency response team is available and that the setting provides the required availability of Emergency services that could be needed to ensure the patient's safety should a complication occur.
- HBO therapy is contraindicated and therefore not covered in the following two circumstances:
 - Presence of untreated pneumothorax
 - In pregnant patients, except for treatment of carbon monoxide poisoning

Notice: It is never appropriate to bill Medicare for services that are not covered as if they are covered. When billing for non-covered services, use the appropriate modifier(s) to indicate such.

Coding Information

Bill Type Codes:

Contractors may specify Bill Types to help providers identify those Bill Types typically used to report this service. Absence of a Bill Type does not guarantee that the policy does not apply to that Bill Type. Complete absence of all Bill Types indicates that coverage is not influenced by Bill Type and the policy should be assumed to apply equally to all claims.

Code	Description
013x	Hospital Outpatient
085x	Critical Access Hospital

Revenue Codes:

Contractors may specify Revenue Codes to help providers identify those Revenue Codes typically used to report this service. In most instances Revenue Codes are purely advisory; unless specified in the policy services reported under other Revenue Codes are equally subject to this coverage determination. Complete absence of all Revenue Codes indicates that coverage is not influenced by Revenue Code and the policy should be assumed to apply equally to all Revenue Codes.

Note: The contractor has identified the Bill Type and Revenue Codes applicable for use with the CPT/HCPCS codes included in this LCD. Providers are reminded that not all CPT/HCPCS codes listed can be billed with all Bill Type and/or Revenue Codes listed. CPT/HCPCS codes are required to be billed with specific Bill Type and Revenue Codes. Providers are encouraged to refer to the CMS Internet-Only Manual (IOM) Pub. 100-04, Claims Processing Manual, for further guidance.

Code	Description
0413	Respiratory Services - Hyperbaric Oxygen Therapy

CPT/HCPCS Codes

Group 1 Paragraph: Note: Providers are reminded to refer to the long descriptors of the CPT codes in their CPT books.

Group 1 Codes:

Code	Description
99183	Hyperbaric oxygen therapy
C1300	HYPERBARIC Oxygen

ICD-9 Codes that Support Medical Necessity

Group 1 Paragraph: Note: Providers should continue to submit ICD-9-CM diagnosis codes without decimals on their claim forms and electronic claims

The CPT/HCPCS codes included in this LCD will be subjected to procedure to diagnosis editing. The following lists include only those diagnoses for which the identified CPT/HCPCS procedures are covered. If a covered diagnosis is not on the claim, the edit will automatically deny the service as not medically necessary.

Medicare is establishing the following limited coverage for **CPT/HCPCS codes C1300 and 99183:**

Group 1 Codes:

Code	Description
039.0 - 039.4	CUTANEOUS ACTINOMYCOTIC INFECTION - MADURA FOOT
039.8 - 039.9	ACTINOMYCOTIC INFECTION OF OTHER SPECIFIED SITES - ACTINOMYCOTIC INFECTION OF UNSPECIFIED SITE
040.0	GAS GANGRENE
250.70 -	DIABETES WITH PERIPHERAL CIRCULATORY DISORDERS, TYPE II OR UNSPECIFIED TYPE, NOT STATED AS UNCONTROLLED - DIABETES WITH PERIPHERAL CIRCULATORY DISORDERS, TYPE I

250.73*	[JUVENILE TYPE], UNCONTROLLED
250.80 - 250.83*	DIABETES WITH OTHER SPECIFIED MANIFESTATIONS, TYPE II OR UNSPECIFIED TYPE, NOT STATED AS UNCONTROLLED - DIABETES WITH OTHER SPECIFIED MANIFESTATIONS, TYPE I [JUVENILE TYPE], UNCONTROLLED
444.21 - 444.22*	ARTERIAL EMBOLISM AND THROMBOSIS OF UPPER EXTREMITY - ARTERIAL EMBOLISM AND THROMBOSIS OF LOWER EXTREMITY
444.81*	EMBOLISM AND THROMBOSIS OF ILIAC ARTERY
526.89	OTHER SPECIFIED DISEASES OF THE JAWS
707.10 - 707.15*	UNSPECIFIED ULCER OF LOWER LIMB - ULCER OF OTHER PART OF FOOT
707.19*	ULCER OF OTHER PART OF LOWER LIMB
728.86*	NECROTIZING FASCIITIS
730.10 - 730.19	CHRONIC OSTEOMYELITIS SITE UNSPECIFIED - CHRONIC OSTEOMYELITIS INVOLVING MULTIPLE SITES
902.53*	INJURY TO ILIAC ARTERY
903.01*	INJURY TO AXILLARY ARTERY
903.1*	INJURY TO BRACHIAL BLOOD VESSELS
904.0*	INJURY TO COMMON FEMORAL ARTERY
904.41*	INJURY TO POPLITEAL ARTERY
909.2*	LATE EFFECT OF RADIATION
927.00 - 927.03*	CRUSHING INJURY OF SHOULDER REGION - CRUSHING INJURY OF UPPER ARM

927.09*	CRUSHING INJURY OF MULTIPLE SITES OF UPPER ARM
927.10 - 927.11*	CRUSHING INJURY OF FOREARM - CRUSHING INJURY OF ELBOW
927.20 - 927.21*	CRUSHING INJURY OF HAND(S) - CRUSHING INJURY OF WRIST
927.8 - 927.9*	CRUSHING INJURY OF MULTIPLE SITES OF UPPER LIMB - CRUSHING INJURY OF UNSPECIFIED SITE OF UPPER LIMB
928.00 - 928.01*	CRUSHING INJURY OF THIGH - CRUSHING INJURY OF HIP
928.10 - 928.11*	CRUSHING INJURY OF LOWER LEG - CRUSHING INJURY OF KNEE
928.20 - 928.21*	CRUSHING INJURY OF FOOT - CRUSHING INJURY OF ANKLE
928.3*	CRUSHING INJURY OF TOE(S)
928.8 - 928.9*	CRUSHING INJURY OF MULTIPLE SITES OF LOWER LIMB - CRUSHING INJURY OF UNSPECIFIED SITE OF LOWER LIMB
929.0*	CRUSHING INJURY OF MULTIPLE SITES NOT ELSEWHERE CLASSIFIED
929.9*	CRUSHING INJURY OF UNSPECIFIED SITE
958.0*	AIR EMBOLISM AS AN EARLY COMPLICATION OF TRAUMA
986*	TOXIC EFFECT OF CARBON MONOXIDE
987.7*	TOXIC EFFECT OF HYDROCYANIC ACID GAS
989.0*	TOXIC EFFECT OF HYDROCYANIC ACID AND CYANIDES

990*	EFFECTS OF RADIATION UNSPECIFIED
993.2 - 993.3	OTHER AND UNSPECIFIED EFFECTS OF HIGH ALTITUDE - CAISSON DISEASE
996.52	MECHANICAL COMPLICATION OF PROSTHETIC GRAFT OF OTHER TISSUE NOT ELSEWHERE CLASSIFIED
996.90 - 996.96*	COMPLICATIONS OF UNSPECIFIED REATTACHED EXTREMITY - COMPLICATION OF REATTACHED LOWER EXTREMITY OTHER AND UNSPECIFIED
996.99*	COMPLICATION OF OTHER SPECIFIED REATTACHED BODY PART
999.1*	AIR EMBOLISM AS A COMPLICATION OF MEDICAL CARE NOT ELSEWHERE CLASSIFIED

Group 1 Asterisk: ICD-9-CM codes 250.70–250.73 or 250.80–250.83 must be listed in addition to a covered wound diagnosis code (707.10–707.15 or 707.19) to indicate this condition. Per NCD 20.29.

Codes **444.21 - 444.22, 444.81, 728.86, 902.53, 903.01, 903.1, 904.0, 904.41, 927.00 - 927.03, 927.09, 927.10 - 927.11, 927.20 - 927.21, 927.8 - 927.9, 928.00 - 928.01, 928.10 - 928.11, 928.20 - 928.21, 928.3, 928.8 - 928.9, 929.0, 929.9, 958.0, 986, 987.7, 989.0, 996.90 - 996.96, 996.99 & 999.1** are covered only when provided in the inpatient setting.

Code (909.2) also the condition or nature of the late effect must be listed and should be sequenced first.

Code (990) also the specific diagnosis code(s) for the condition or nature of the effect of radiation, if known based on medical record documentation must be listed; this code (or codes) should be sequenced first.

ICD-9 Codes that DO NOT Support Medical Necessity

All diagnoses not listed in the "ICD-9-CM Codes That Support Medical Necessity" section of this LCD.

General Information

Associated Information

Documentation Requirements

The medical documentation should include but is not limited to the following and must be made available to Medicare upon request:

1. Documentation must be legible and appropriately authenticated by the billing provider, maintained in the patient's medical record, and made available to Medicare upon request.

2. The medical record must clearly describe the specific condition being treated with HBO therapy and must support the medical necessity of such treatment.
3. The clinical record must provide an accurate description and diagnosis of the medical condition supporting safety and effectiveness of HBOT.
4. A treatment plan identifying timeline and established treatment goals should be documented.
 - a. The record must demonstrate the patient's progress toward the established goals for HBO therapy.
5. An initial assessment including medical history detailing the condition or event requiring HBO therapy with physical and clinical findings justifying medical necessity.
 - a. The medical history should document the event, date, time, treatment to date, and other clinical data necessary to support the necessity (i.e., precipitating event) of HBO therapy.
 - b. The medical history should list prior treatments including resuscitation, antibiotic and surgical interventions.
6. Documentation of current adjunctive treatment should include type of treatment and the effectiveness of same.
7. Definitive radiographic findings or positive bone culture with sensitivity studies confirming the diagnosis of osteomyelitis, and documentation of failed antibiotic therapy and surgical management must be available as support for payment of HBO treatment.
8. Documentation to support the presence of gas gangrene with laboratory reports (Gram stain or cultures) and radiologic reports of gas in tissue.
9. Surgical, laboratory and pathology reports that confirm the diagnosis of necrotizing fasciitis are required and must be present as support for payment of HBO for treatment of necrotizing fasciitis.
10. Documentation of prior radiation therapy treatments (including date, anatomical site and dose of radiation therapy), with documentation of fracture or resorption of bone, and radiographic studies, confirming the diagnosis of osteoradionecrosis.
11. Documentation of date of skin graft or flap and compromised state of graft site.
12. HBO therapy of diabetic lower extremity or foot ulcer requires legible documentation that the patient has type I or type II diabetes and a lower extremity wound (due to diabetes) classified as Wagner grade III or higher per NCD 20.29. For diabetic wounds of the lower extremity, the Wagner classification of the wound and the failure of an adequate course of standard wound therapy must be documented at the initiation of therapy.

NOTE: The 'Wagner Ulcer Classification System' is defined in the "decision Memo for Hyperbaric Oxygen Therapy for Hypoxic Wounds and Diabetic Wounds of the Lower Extremities" (CAG-00060N) published by CMS.

- a. Documentation should demonstrate an ulcer with bone involvement (osteomyelitis), or localized tissue loss that is the result of gangrene failing to respond to an adequate course of standard therapy.
- b. Documentation must reflect that the HBO therapy is used in addition to standard wound care with wound evaluation at least every 30 days during HBO therapy. Documentation of standard wound care in patients with diabetic wounds must include: assessment of a patient's vascular status and documentation of correction of any vascular problems in the affected limb; documentation of optimization of nutritional status; optimization of glucose control; documentation of debridement by any means to remove devitalized tissue or pressure point; documentation of maintenance of a clean, moist bed of granulation tissue with appropriate moist dressings;

documentation of efforts for appropriate off-loading; and documentation of necessary treatment to resolve any infection that might be present.

c. Failure to respond to standard wound care occurs when there is no documentation of measurable signs of healing for at least 30 consecutive days.

13. Physician progress notes and any communication between physicians detailing past or future (proposed) treatments.

a. Physicians' progress notes must describe the physical findings, type(s) of treatment(s) provided, number of treatments provided, ascent time, descent time, total compression time, dose of oxygen, pressurization level, documentation of physician attendance and supervision, a recording of events, the effectiveness of treatment(s) received and assessment of the patient's progress toward established therapy goals.

14. Each HBO therapy treatment record must describe the physical findings and the treatment rendered (including).

Supervision of HBOT

Appropriate direct **qualified physician*** supervision is a requirement for Medicare coverage. The Office of the Inspector General (OIG) links the quality of care to the physical presence of the physician (Qualified Hyperbaric Health Care Professional) during the entire treatment for the purpose of managing the patient's overall care, as identified in the October 2000 report, 'Hyperbaric Oxygen Therapy, Its Use and Appropriateness.'

The capacity of a hyperbaric facility to care for a patient is determined by the training and experience of the supervising physician, the professional staff and the nurses and hyperbaric technicians in addition to the equipment available (e.g., ventilator support for critical patients, resuscitation and intervention capacity and intensive care beds available on the facility). Thus, requirements for physician credentialing at any practice setting should be developed in conjunction with the policies and capabilities of the facility in consideration of the acuity level of patients to be treated, the diagnoses managed and the type of chamber being utilized. Hyperbaric credentialing requirements should be commensurate with the level of care and scope of practice of the individual clinical settings.

For the purpose of this LCD, "Immediately available" shall mean present in the HBO chamber area and available to assist in five minutes or less.

Direct Physician Supervision

HBO therapy rendered **within a hospital outpatient department** is considered furnished "incident to" a physician's services and requires physician supervision. **For payment purposes**, "direct supervision" per 42 CFR 410.27(f), **in a hospital outpatient setting**, means the physician must be present and on the premise of the location and **immediately available** to furnish assistance and direction throughout the performance of the procedure. It does not mean that the physician must be present in the room when the procedure is performed. ((42 CFR 410.27(f)(emphasis added))

The physician supervision requirement is presumed to be met when services are performed on the hospital premises (i.e., certified as part of the hospital and part of the hospital campus). Immediately available shall mean at a maximum of five minutes from the chamber. However, for patient safety purposes (thus reasonable and necessary) in all instances, the physician must be personally present during the ascent and descent portions of each treatment and a trained emergency response team must be available throughout the treatment for emergent clinical care and process to transfer

the patient within the facility or to another facility for required critical care services as necessary.

In a physician office setting or off-campus provider-based setting, direct Physician Supervision is achieved only when a physician is present in the office/suite and immediately available during the entire hyperbaric treatment session. The physician's personal presence is required during the ascent and descent portions of the hyperbaric treatment. **Direct supervision** means the physician **must be present** in the office suite and immediately available to furnish assistance and direction throughout the performance of the procedure. ((42 CFR 410.26(a)(2) and 410.32(b)(3)(11))

Requirements for physician qualification

Physicians who provide HBOT supervision are expected to perform the following clinical functions:

- Identify and diagnose patients who are candidates for hyperbaric oxygen therapy.
- Medically clear patients for the safe delivery of hyperbaric medicine.
- Provide therapeutic management using hyperbaric medicine and facilities available.
- Perform consultation in hyperbaric medicine.
- Order diagnostic procedures related to the patient's diagnosis.
- In the case of a multi-place chamber operation, the physician must be able to properly oversee the safe work environment of inside attendants unique to the hyperbaric environment.
- Respond to medical emergencies and complications of HBOT.

Therefore, all physicians who supervise HBOT must meet the following minimal training and competency requirements

- Hold an unrestricted state medical license for full scope of practice; and
- Hold current certification by the American Heart Association in Advance Cardiac Life Support (ACLS) or ABMS certification in a relevant specialty with current MOC; and
- Within 2 years of the effective date of this LCD, physicians must have completed one of the following:

ACGME, American Osteopathic Association or Department of Defense recognized fellowship in Hyperbaric Medicine with Board Certification or eligibility in the subspecialty of Undersea and Hyperbaric Medicine by the American Board of Medical Specialties or the American Osteopathic Association;

OR (combination of Education and Training):

40 hour introductory course in hyperbaric medicine approved by ACHM, UHMS or DOD not more than 5 years prior to applying to oversee treatment and one of the following:

- has performed at least 25 treatments per year since that time, or
- supervised 25 hyperbaric treatments with face-to-face proctoring by a qualified hyperbaric physician followed by quality review of 100 non-proctored cases as part of an Ongoing Professional Practice Evaluation (OPPE) as recommended and outlined by the Joint Commission on Hospital Accreditation.

If either provision has not been fulfilled within the preceding 2 years, at least 15 hours of CME credit relevant to HBOT must be completed prior to resuming care of the hyperbaric patient.

- The physician should demonstrate competency in chamber operation and the emergency treatment of hyperbaric related medical conditions and complications of therapy. In lieu of proctoring, the physician may obtain from the training program director of a hyperbaric center attestation of evidence that the physician has satisfactorily supervised at least 50 treatments and performed 25 hyperbaric consultations in the prior two years.

Maintenance of education is recommended for all settings of Hyperbaric Oxygen Therapy consisting of completing 15 Category 1 CME credits in hyperbaric medicine every 24 months with documentation of having supervised at least 50 treatments over the 24 month period.

Special Consideration

Podiatrists (DPM) and Qualified Non-Physician Practitioners (Advanced Practice Nurse Practitioners and Physician Assistants) do not have unrestricted full scope of practice licensure to perform the services expected and required of the supervising physician; subsequently, they are not eligible for Medicare payment for HBOT supervision. Podiatric Scope of Practice is limited to disease of the lower extremity (foot and ankle) and does not allow unrestricted licensure to practice medicine or meet other certification, education, and training requirements for physicians under this LCD. For patient safety, a qualified physician and emergency response team must be immediately available to assist with complications that fall outside the podiatrist's scope of practice.

HBOT Facility Requirements

These requirements are intended to ensure that clinical hyperbaric facilities are properly equipped and staffed to operate at the highest standard for patient safety and care.

Facility policies must be developed and maintained in major areas related to hyperbaric operations to include: Administration, Risk Management and Quality Assurance, Facility Construction, Operations and Maintenance, Chamber Fabrication, Ventilation and Gas Handling, Electrical Systems and Fire Protection.

For Medicare payment purposes, all facilities that provide HBOT must have in place hyperbaric facility operational policies and procedures that comply with and adhere to standards and guidelines issued by the following:

- Joint Commission on Accreditation of Health Care Organization (JCAHO),
- National Fire Protection Association (NFPA) - NFPA 99, Health Care Facilities - Chapter 20, Hyperbaric Facilities - 2005 Edition,
- Accreditation Association of Ambulatory Health Care (AAAHC),
- Compressed Gas Association (CGA),
- American Institute of Architects (AIA) - Guidelines for Design and Construction of Health Care Facilities publication - Hyperbaric Appendix.

Facility Staff Training and Competency Requirements

It is required that each facility designate a Hyperbaric Safety Director to monitor all hyperbaric facility equipment and to implement the mandated operational safety requirements. It is assumed that the Hyperbaric Safety Director has successfully completed an approved Hyperbaric Safety Course such as one approved by the ACHM or UHMS, Maintain State Board Licensure and ACLS Certification. Certification in Hyperbaric Medicine or CAQ in Hyperbaric Medicine is recommended.

Nursing, clinical and technical staff who participate in the care and services of hyperbaric patients must obtain the following training and certification such that each facility is staffed with at least one individual meeting these criteria, in addition to the qualified physician, at any time a patient is present in the facility.

1. ACLS certification
2. Completion of a 40-hour in-person or web-based accredited training program such as one approved by the American College of Hyperbaric Medicine or the Undersea and Hyperbaric Medical Society.
3. Certification in Hyperbaric Medicine or CAQ by one of the following:

The American Board of Wound Healing (ABWH),
The Baromedical Nurses Association (BNA),
The National Board of Diving & Hyperbaric Medical Technology (NBDHMT).

Documentation that a trained emergency response team is available and that the setting provides a policy for emergent critical care and process to transfer the patient to another facility for required critical care services needed to insure patient safety, should complication occur.

Utilization Guidelines

HBO therapy must not be a replacement for other standard successful therapeutic measures. Depending on the response of the individual patient and the severity of the original problem, treatment may range from less than one week to several months duration, the average being two to four weeks.

Review and document the medical necessity for the use of hyperbaric oxygen for more than two months, regardless of the condition of the patient.

Notice: This LCD imposes utilization guideline limitations. Despite Medicare's allowing up to these maximums, each patient's condition and response to treatment must medically warrant the number of services reported for payment. Medicare requires the medical necessity for each service reported to be clearly demonstrated in the patient's medical record. Medicare expects that patients will not routinely require the maximum allowable number of services.

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Other Contractor Policies: Palmetto GBA, First Coast Service Options, Inc. CGS Administrators, LLC.

Contractor Medical Directors

Revision History Information

Revision History Date	Revision History Number	Revision History Explanation	Reason(s) for Change
07/24/2014	R1	LCD posted for notice on 06/05/2014 to become effective 07/24/2014. Please note that through the creation of a uniform LCD across Novitas MAC jurisdictions, this LCD has been assigned a new LCD number. Hyperbaric Oxygen (HBO) Therapy LCDs currently in effect will be retired when this LCD becomes effective.	Creation of Uniform LCDs With Other MAC Jurisdiction

	01/16/2014 Draft LCD posted for comment.	
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Associated Documents

Attachments

N/A

Related Local Coverage Documents

N/A

Related National Coverage Documents

N/A

Keywords

N/A