

# Medical Coverage Policy



**Blue Cross  
Blue Shield**  
of Rhode Island

## Hyperbaric Oxygen Therapy (HBO)

Device/Equipment    Drug    Medical    Surgery    Test    Other

|                        |                 |                             |                  |
|------------------------|-----------------|-----------------------------|------------------|
| <b>Effective Date:</b> | <b>4/1/1998</b> | <b>Policy Last Updated:</b> | <b>6/19/2012</b> |
|------------------------|-----------------|-----------------------------|------------------|

**Prospective review is recommended/required. Please check the member agreement for preauthorization guidelines.**

**Prospective review is not required.**

### Description:

#### Hyperbaric oxygen therapy:

Hyperbaric oxygen therapy (HBO) is a treatment delivering higher pressure of oxygen to the tissues. There are two types of administration.

#### Systemic hyperbaric oxygen therapy:

A patient receiving systemic hyperbaric oxygen therapy is entirely enclosed in a pressurized chamber and breathes pure oxygen at a pressure greater than one atmosphere (the pressure of oxygen at sea level). The systemic circulation delivers the highly oxygenated blood to the wound site. Treatment may be administered in a monoplace (one person) or multiplace (two or more person) chamber with the patient receiving pure oxygen by mask, head tent, or endotracheal tube.

The use of systemic HBO therapy as an adjunctive therapy is typically covered only after there are no measurable signs of healing after a minimum of 30 days of treatment with standard wound therapy. Failure to respond to standard wound care is defined as no measurable signs of healing after a minimum of 30 consecutive days. HBO is used in as an adjunct to standard wound care

#### Topical hyperbaric oxygen therapy:

Topical hyperbaric oxygen therapy (THBO) is a treatment delivering oxygen directly to a moist, open wound. THBO uses appliances to enclose the wound area and a conventional oxygen tank. Treatment may be performed in the office or when properly trained, without supervision by the patient in the home. Topical hyperbaric oxygen therapy is not covered as its clinical efficacy has not been established.

#### Simultaneous use of systemic hyperbaric oxygen therapy and vacuum-assisted wound closure:

Wounds failing to heal due to persistent infection, inadequate perfusion, hypoxia, cellular failure, repetitive trauma, or tissue injury may benefit from the simultaneous use of HBO and VAC.

All CMS covered conditions are included in this policy.

### Medical Criteria:

#### **Hyperbaric Oxygen Therapy**

HBO is covered in the following circumstances and does not require preauthorization:

- Actinomycosis (ICD-9-CM diagnoses 039.0-039.4, 039.8, 039.9)
- Acute carbon monoxide intoxication, (ICD-9-CM diagnosis 986)
- Acute traumatic peripheral ischemia (ICD-9-CM diagnosis 902.53, 903.01, 903.1, 904.0, 904.41)

- Crush injuries and suturing of severed limbs (ICD-9-CM diagnosis 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- 996.99)
- Decompression illness (ICD-9-CM diagnosis 993.2, 993.3)
- Cyanide poisoning (ICD-9-CM diagnosis 987.7, 989.0)
- Gas embolism (ICD-9-CM diagnosis 958.0, 999.1)
- Gas gangrene (ICD-9-CM diagnosis 040.0)
- Osteoradionecrosis (ICD-9-CM diagnosis 526.89)
- Progressive necrotizing infections (necrotizing fasciitis) (ICD-9-CM diagnosis 728.86)
- Soft tissue radionecrosis (ICD-9-CM diagnosis 990)
- For any condition in which the severity warrants inpatient care (e.g., profound anemia with exceptional blood loss: only when blood transfusion is impossible or must be delayed)
- Pre- and post-treatment for patients undergoing dental surgery (non-implant related) of an irradiated jaw

**Preauthorization is required for BlueCHIP for Medicare and recommended for all other lines of business including, but not limited to, the following conditions:**

- Acute peripheral arterial insufficiency, (ICD-9-CM diagnosis 444.21, 444.22, 444.81)
- Preparation and preservation of compromised skin grafts (not for primary management of wounds), (ICD-9CM diagnosis 996.52; failure of artificial skin graft 996.55 is **not medically necessary**)
- Chronic refractory osteomyelitis, unresponsive to conventional medical and surgical management, (ICD-9-CM diagnosis 730.10-730.19)
- Failure to respond to standard wound care\*  
\*Failure to respond to standard wound care is defined as no measurable signs of healing after a minimum of 30 consecutive days of treatment. In addition, the clinical information submitted must document that all of the following have been addressed:
  - assessment of a patient's vascular status and correction of any vascular problems in the affected limb if possible,
  - nutritional status,
  - glucose control (if diabetic),
  - 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.

***Simultaneous use of Hyperbaric Oxygen Therapy (HBO) and Vacuum-Assisted Wound Closure (VAC):***

Complex wounds with systemic factors compromising wound healing may benefit from the concurrent use of HBO and VAC. As applied to the wound type, **all** of the following criteria must be met **and** prior authorization is required for BlueCHIP for Medicare and recommended for all other lines of business:

- must meet criteria for each device if the one device was the only requested service;
- failure of conservative measures (applies to chronic wounds only);
- continuation of inpatient initiated therapies, if applicable; and
- combination therapy is the treatment plan established recommendation from by a multi-disciplinary wound care center.

***Autism:***

Hyperbaric oxygen therapy in the treatment of autism spectrum disorders is **not medically necessary** due to lack of controlled studies.

***Radiation Therapy:***

Hyperbaric oxygen therapy as an early treatment to reduce the side effects of soft tissue clarify radiation therapy is **not medically necessary** due to the limited available data to support this treatment at this time.

**Topical hyperbaric oxygen therapy:**

Topical hyperbaric oxygen therapy (THBO) is considered **not medically necessary**. THBO does not meet the definition of HBO therapy as defined in this medical policy and its clinical efficacy has not been established.

**Policy:**

As noted above, prior authorization is required for BlueCHiP for Medicare and recommended for all other lines of business for treatment of chronic wounds not responding to standard wound care.

Topical hyperbaric oxygen therapy is considered **not medically necessary** as clinical efficacy has not yet been established.

**Coverage:**

Benefits may vary between groups/contracts. Please refer to the appropriate Evidence of Coverage, Subscriber Agreement, or Benefit Booklet for applicable Rehabilitative/Surgery coverage.

**Note:** Services rendered by institutional providers apply to the members Surgery benefit  
Services rendered by professional providers apply to the members rehabilitative services benefit

Prior authorization is required for BlueCHiP for Medicare and recommended for all other lines of business.

**Coding:**

The following code is **covered**:

**99183**

The following codes are **not medically necessary**:

**A4575**

**E0446**

**ICD-9-CM codes:**

|               |   |
|---------------|---|
| <b>039.0</b>  | Cutaneous actinomycotic infection                       |
| <b>039.1</b>  | Pulmonary actinomycotic infection                       |
| <b>039.2</b>  | Abdominal actinomycotic infection                       |
| <b>039.3</b>  | Cervicofacial actinomycotic infection                   |
| <b>039.4</b>  | Madura foot   |
| <b>039.8</b>  | Actinomycotic infection of other specified sites        |
| <b>039.9</b>  | Actinomycotic infection of unspecified site             |
| <b>040.0</b>  | Gas gangrene  |
| <b>444.21</b> | Arterial embolism and thrombosis of upper extremity     |
| <b>444.22</b> | Arterial embolism and thrombosis of lower extremity     |
| <b>444.81</b> | Embolism and thrombosis of iliac artery                 |
| <b>526.89</b> | Other specified diseases of the jaws                    |
| <b>728.86</b> | Necrotizing fasciitis                                   |
| <b>730.10</b> | Chronic osteomyelitis, site unspecified                 |
| <b>730.11</b> | Chronic osteomyelitis involving shoulder region         |
| <b>730.12</b> | Chronic osteomyelitis involving upper arm               |
| <b>730.13</b> | Chronic osteomyelitis involving forearm                 |
| <b>730.14</b> | Chronic osteomyelitis involving hand                    |
| <b>730.15</b> | Chronic osteomyelitis involving pelvic region and thigh |
| <b>730.16</b> | Chronic osteomyelitis involving lower leg               |
| <b>730.17</b> | Chronic osteomyelitis involving ankle and foot          |

|               |  |
|---------------|--|
| <b>730.18</b> | Chronic osteomyelitis involving other specified sites                              |
| <b>730.19</b> | Chronic osteomyelitis involving multiple sites                                     |
| <b>902.53</b> | Injury to iliac artery   |
| <b>903.01</b> | Injury to axillary artery  |
| <b>903.1</b>  | Injury to brachial blood vessels   |
| <b>904.0</b>  | Injury to common femoral artery  |
| <b>904.41</b> | Injury to popliteal artery   |
| <b>927.00</b> | Crushing injury of shoulder region   |
| <b>927.01</b> | Crushing injury of scapular region   |
| <b>927.02</b> | Crushing injury of axillary region   |
| <b>927.03</b> | Crushing injury of upper arm   |
| <b>927.09</b> | Crushing injury of multiple sites of upper arm                                     |
| <b>927.10</b> | Crushing injury of forearm   |
| <b>927.11</b> | Crushing injury of elbow   |
| <b>927.20</b> | Crushing injury of hand(s)   |
| <b>927.21</b> | Crushing injury of wrist   |
| <b>927.8</b>  | Crushing injury of multiple sites of upper limb                                    |
| <b>927.9</b>  | Crushing injury of unspecified site of upper limb                                  |
| <b>928.00</b> | Crushing injury of thigh   |
| <b>928.01</b> | Crushing injury of hip   |
| <b>928.10</b> | Crushing injury of lower leg   |
| <b>928.11</b> | Crushing injury of knee  |
| <b>928.20</b> | Crushing injury of foot  |
| <b>928.21</b> | Crushing injury of ankle   |
| <b>928.3</b>  | Crushing injury of toe(s)  |
| <b>928.8</b>  | Crushing injury of multiple sites of lower limb                                    |
| <b>928.9</b>  | Crushing injury of unspecified site of lower limb                                  |
| <b>929.0</b>  | Crushing injury of multiple sites, not elsewhere classified                        |
| <b>958.0</b>  | Air embolism as an early complication of trauma                                    |
| <b>986</b>    | Toxic effect of carbon monoxide  |
| <b>987.7</b>  | Toxic effect of hydrocyanic acid gas   |
| <b>989.0</b>  | Toxic effect of hydrocyanic acid and cyanides                                      |
| <b>990</b>    | Effects of radiation, unspecified  |
| <b>993.2</b>  | Other and unspecified effects of high altitude                                     |
| <b>993.3</b>  | Caisson disease  |
| <b>996.52</b> | Mechanical complication due to other tissue graft, not elsewhere classified        |
| <b>996.55</b> | Mechanical complication due to artificial skin graft and decellularized allodermis |
| <b>996.94</b> | Complications of reattached upper extremity, other and unspecified                 |
| <b>996.96</b> | Complication of reattached lower extremity, other and unspecified                  |
| <b>996.99</b> | Complication of other specified reattached body part                               |
| <b>999.1</b>  | Air embolism as a complication of medical care, not elsewhere classified           |

**Also Known As:**

HBO  
HOT  
THBO

**Related Topics:**

Negative Pressure Wound Therapy

**Published:**

*Policy Update, May 2004*  
*Policy Update, January 2006*  
*Policy Update, October 2006*  
*Policy Update, October 2007*

Provider Update, January 2010  
Provider Update, December 2010  
Provider Update, September 2011  
Provider Update, September 2012

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Raman G, Kupelnick B, Chew P, Lau J. *A horizon scan: Uses of hyperbaric oxygen therapy*. Technology Assessment Report. Prepared by the Tufts-New England Medical Center Evidence Based Practice Center for the Agency for Healthcare Research and Quality (AHRQ). Rockville, MD: AHRQ; October 5, 2006. Available at: <http://www.cms.hhs.gov/determinationprocess/downloads/id42TA.pdf>.

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