Hyperbaric Oxygen Therapy (HBO)

Background: Hyperbaric Oxygen Therapy (HBO) is used to treat a variety of conditions including carbon monoxide poisoning, tissue injury due to radiation exposure, trauma, chronic wounds, surgery, or infection. During the therapy the patient breathes in and is exposed to pure oxygen at a pressure typically 2 to 3 times greater than the atmospheric pressure. The elevated concentration of blood plasma and by non-poisoned hemoglobin elevating oxygen delivery to the tissues. It is intended to either accelerate or cause healing that would not ordinarily occur. Depending on the condition being treated, HBO can work through increasing systemic blood oxygen levels, increasing ambient pressure while reducing blood nitrogen levels (countering the primary cause and mechanism of decompression sickness), increasing the oxygen levels in wounded tissue, and/or exposing anaerobic bacteria to a pure oxygen environment.

Prior authorization:
Prior authorization is required for all outpatient Hyperbaric Oxygen Therapy (HBO) provided to members enrolled in Harvard Pilgrim Health Care (HPHC) Commercial (HMO, POS, and PPO) products. Prior authorization is not required for Hyperbaric Oxygen Therapy, in a pressurized chamber for the treatment of emergency conditions for members enrolled in Harvard Pilgrim (HPHC) Commercial (HMO, POS, and PPO) products.

Policy and Coverage Criteria:
The Plan considers non-emergent hyperbaric oxygen therapy (HBO) as reasonable and medically necessary when documentation confirms ANY of the following conditions:

1. Severe or profound anemia with exceptional blood loss: only when blood transfusion is impossible or must be delayed
2. Preparation and preservation of hypoxia- or decreased-prefusion-compromised skin grafts and flaps, supported by photograph (with ruler for scale), identification flap/graft type, graft surgeon identification, surgical exploration results, and transcutaneous oxygen tension testing results indicating hypoxia (TcPO2 less than 40mmHg on room air), when conventional treatment failure is indicated by ANY of the following:
   a. Etiology of compromise cannot be identified
   b. Etiology of compromise cannot be corrected surgically
   c. Compromise persists despite correction of all identified etiologies
3. Adjunctive treatment with conventional therapy for ANY of the following WHEN unresponsive to conventional therapy alone:
   a. Osteo- or soft tissue radionecrosis (e.g., radiation enteritis, cystitis, proctitis) when chronic and refractory to conventional medical and/or surgical management that includes debridement or resection of nonviable tissue along with antibiotic therapy
      i. If treatment is for osteoradionecrosis of the jaw, there is evidence of bony resorption or overt fracture in a previously irradiated mandible
   b. Chronic refractory osteomyelitis unresponsive to (or in a case contraindicating) at least surgical debridement and a six-week course of parenteral antibiotics
   c. Progressive necrotizing infections (necrotizing fasciitis, Meloney’s ulcer), with conventional treatment having included inpatient antibiotics, surgical debridement, and, when indicated, skin grafts
d. Actinomycosis refractory to antibiotics and surgical treatment

e. Sudden sensorineural hearing loss (SSNHL) according to standard definition (hearing decline of at least 30 decibels in at least three sequential frequencies in no more than three days) as an addition to corticosteroid treatment when initiation of HBO treatment is within fourteen days of onset

4. Adjunctive treatment of diabetic ulcerations/wounds of the lower extremities when BOTH of the following are confirmed:
   a. Ulcerations have a severity of at least Wagner grade III
   b. Ulcerations have not healed appreciably after thirty days of standard wound therapy, including ALL the following when appropriate
      i. Assessment and correction of vascular condition in affected limb(s)
      ii. Nutritional adjustment
      iii. Glucose control improvement
      iv. Debridement
      v. Maintenance of granulation tissue cleanliness and moisture with dressings
      vi. Appropriate off-loading
      vii. Treatment of any infection

Coverage of hyperbaric oxygen therapy for non-emergent conditions requires:
   • Prior authorization
   • All conditions being treated with adjunctive HBO, including treatment of compromised grafts and diabetic ulcerations, must be evaluated and documented at least every 15 sessions and at least every 30 days of treatment
   • For members with compromised skin grafts or diabetic foot wounds, the following criteria must be met:
      o The treatment can be used as adjunctive therapy only when there has been no measurable improvement in the Member’s condition
      o A treatment plan has been submitted to HPHC for review which includes the proposed number of treatments as well as the goal of the therapy
   • For members with osteoradionecrosis, HPHC will consider coverage of hyperbaric oxygen therapy as an adjunctive treatment. A letter of medical necessity must be submitted

Note:
   • HPHC will not cover hyperbaric oxygen therapy as a prophylactic measure, including prior to the extraction of teeth or other oral surgery procedures
   • HPHC considers adjunctive HBO as not medically necessary when following any 30-day period in which measurable signs of healing have not been demonstrated

Exclusions: Harvard Pilgrim Health Care (HPHC) considers topical oxygen therapy as experimental/investigational regardless of place of setting.

Harvard Pilgrim Health Care (HPHC) considers full-body hyperbaric oxygen therapy (HBO) as not medically necessary for all other indications. In addition, HPHC does not cover HBO for:
   • Acute cerebral edema
   • Acute osteomyelitis
   • Hepatic necrosis
   • Aerobic septicemia
   • Cutaneous, decubitus, and stasis ulcer
   • Chronic peripheral vascular insufficiency
   • Acute or chronic cerebral vascular insufficiency
   • Arthritic diseases
   • Nonvascular factors in chronic brain syndromes (such as dementia, Pick’s disease, Alzheimer’s disease, Korsakoff’s disease)
Hyperbaric Oxygen Therapy (HBO)

HPHC policies are based on medical science, and written to apply to the majority of people with a given condition. Individual members’ unique clinical circumstances, and capabilities of the local delivery system are considered when making individual UM determinations.

Coverage described in this policy is standard under most HPHC plans. Specific benefits may vary by product and/or employer group. Please reference appropriate member materials (e.g. Benefit Handbook, Certificate of Coverage) for member-specific benefit information.

### Guidelines:

The Wagner Diabetic Foot Ulcer Grade Classification System is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No open lesion</td>
</tr>
<tr>
<td>1</td>
<td>Superficial ulcer without penetration to deeper layers</td>
</tr>
<tr>
<td>2</td>
<td>Ulcer penetrates to tendon, bone, or joint</td>
</tr>
<tr>
<td>3</td>
<td>Lesion has penetrated deeper than grade 2 and there is abscess, osteomyelitis, pyarthrosis, plantar space abscess, or infection of the tendon and tendon sheaths</td>
</tr>
<tr>
<td>4</td>
<td>Wet or dry gangrene in the toes or forefoot</td>
</tr>
<tr>
<td>5</td>
<td>Gangrene involves the whole foot or such a percentage that no local procedures are possible and amputation (at least below the knee level) is indicated</td>
</tr>
</tbody>
</table>

### Coding:

Codes are listed below for informational purposes only, and do not guarantee member coverage or provider reimbursement. The list may not be all-inclusive. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible.

<table>
<thead>
<tr>
<th>CPT® Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>99183</td>
<td>Physician attendance and supervision of hyperbaric oxygen therapy, per session</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HCPCS Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G0277</td>
<td>Hyperbaric oxygen under pressure, full body chamber, per 30-minute interval</td>
</tr>
</tbody>
</table>

Codes considered *not* medically necessary:

<table>
<thead>
<tr>
<th>HCPCS Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A4575</td>
<td>Topical hyperbaric oxygen chamber, disposable</td>
</tr>
<tr>
<td>E0446</td>
<td>Topical oxygen delivery system, not otherwise specified, includes all supplies and accessories</td>
</tr>
</tbody>
</table>
Billing Guidelines:
Member’s medical records must document that services are medically necessary for the care provided. Harvard Pilgrim Health Care maintains the right to audit the services provided to our members, regardless of the participation status of the provider. All documentation must be available to HPHC upon request. Failure to produce the requested information may result in denial or retraction of payment.

30-minute intervals are counted using only the time the member is receiving HBO treatment, including 100% oxygen, descent, air breaks, and ascent. Treatment time may be rounded up if at least 16 minutes, such that one unit of treatment must be at least sixteen minutes, two units must be 46 minutes, three units must be at least 76 minutes, et cetera.

References:


35. Hyperbaric Oxygen Therapy for Burns, Infections, and Nondiabetic Wounds. Hayesinc.com/subscriber [via subscription only].


37. Hyperbaric Oxygen Therapy for Diabetic Foot Wounds. Hayesinc.com/subscriber [via subscription only].

38. Hyperbaric Oxygen Therapy for Encephalopathy Resulting from a Drug Overdose. Hayesinc.com/subscriber [via subscription only].

39. Hyperbaric Oxygen Therapy for Osteoradionecrosis. Hayesinc.com/subscriber [via subscription only].


Summary of Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>Changes</th>
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</table>

HPHC Medical Policy

Hyperbaric Oxygen Therapy (HBO) VC01SEP22P

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### Hyperbaric Oxygen Therapy (HBO)

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<table>
<thead>
<tr>
<th>Date</th>
<th>Update Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/22</td>
<td>Criteria updated to remove language for emergent use of hyperbaric oxygen therapy</td>
</tr>
<tr>
<td>4/22</td>
<td>Criteria language clarified</td>
</tr>
<tr>
<td>2/22</td>
<td>Coding and criteria updated to include coverage for emergent use of hyperbaric oxygen therapy; updates for integration purposes with Tufts Health Plan (THP)</td>
</tr>
<tr>
<td>5/20</td>
<td>Annual review, criteria and coding updated</td>
</tr>
<tr>
<td>12/17</td>
<td>Criteria refined, regulation of adjunctive use added, supporting information and background updated</td>
</tr>
<tr>
<td>4/17</td>
<td>Removed benchmarks and ICD 9 references</td>
</tr>
</tbody>
</table>

**Approved by Medical Policy Committee:** 7/20/22

**Approved by Clinical Policy Operational Committee:** 9/01; 9/07; 12/09; 12/11; 12/13; 12/15; 12/17; 5/20; 5/21; 3/22; 8/22

**Policy Effective Date:** 9/1/22

**Initiated:** 12/02