Healthy Blue

Clinical UM Guideline

Subject:	Hyperbaric Oxygen Therapy (Systemic/Topical)		
Guideline #:	CG-MED-73	**Publish Date:**	12/29/2021
Status:	Revised	**Last Review Date:**	11/11/2021

Description

This document addresses the use of hyperbaric oxygen therapy (HBOT), which can be applied systemically, topically, or to one or more limbs alone. HBOT involves the use of pressurized room air, 100% oxygen, or room air enriched with a specific concentration of oxygen. The premise of HBOT is that the increased pressure results in increased oxygen levels in systemic circulation and the body's tissues with the goal of improving healing of wounds, injuries or to support oxygen transport in acutely anemic or hypoxic individuals.

Clinical Indications

Medically Necessary:

Systemic hyperbaric oxygen pressurization is considered **medically necessary** in the treatment of any of the following conditions when performed in accordance with Undersea and Hyperbaric Medical Society (UHMS) guidelines:

A. Acute peripheral arterial insufficiency; **or**
B. Acute thermal burns: deep second degree or third degree in nature; **or**
C. Acute traumatic ischemia; **or**
D. Carbon monoxide poisoning; **or**
E. Central retinal artery occlusion (CRAO); **or**
F. Chronic non-healing wounds in the following situations:
    1. Diabetic lower extremity wounds, when the following criteria are met:
        a. As a component of diabetic ulcer management (for example, careful attention to infection control, aggressive surgical debridement, evaluation and correction of vascular insufficiency, extremity offloading, improving glycemic control, and when applicable, encouraging smoking cessation); **and**
        b. Wagner grade III or higher wound severity; **and**
        c. Wound has not responded to 30 days of appropriate conservative treatment; **and**
        d. For continued hyperbaric oxygen therapy, wound shows measurable signs of healing, defined as at least 20% reduction in wound surface area, when evaluated at 30 day intervals; **or**

Historical

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

2. Arterial insufficiency ulcers in individuals with persistent hypoxia despite attempts at increasing blood flow or when wound failure continues despite maximum revascularization; **or**
3. Pressure ulcers in the following situations:
   a. Postoperative support of skin graft or flaps showing evidence of ischemic failure; **or**
   b. In the field of previous irradiated area for pelvic or perineal malignancies; **or**
   c. When progressive necrotizing soft tissue infection or refractory osteomyelitis is present; **or**
4. Venous stasis ulcers when supporting skin grafting or flap reconstruction in individuals with concomitant peripheral arterial occlusive disease and hypoxia not corrected by control of disease; **or**

G. Chronic refractory osteomyelitis; **or**
H. Compartment syndrome; **or**
I. Compromised skin graft or flaps (enhancement of healing in selected wounds); **or**
J. Crush injuries; **or**
K. Cyanide poisoning; **or**
L. Decompression sickness; **or**
M. Delayed radiation injury, including osteoradionecrosis, soft tissue radiation necrosis, and radiation cystitis; **or**
N. Gas or air embolism; **or**
O. Gas gangrene (for example, clostridial myositis and myonecrosis); **or**
P. Intracranial abscess; **or**
Q. Necrotizing soft-tissue infections; **or**
R. Prophylactic pre and post treatment for individuals undergoing dental surgery of a radiated jaw; **or**
S. Severe anemia with exceptional blood loss: when transfusion is impossible or delayed.

Not Medically Necessary:

If the wound fails to show measurable signs of healing within 30 days of initiating and at each subsequent 30 day interval of systemic hyperbaric oxygen pressurization, continued therapy is considered **not medically necessary**.

Topical hyperbaric oxygen is considered **not medically necessary** in all cases.

Limb specific hyperbaric oxygen pressurization is considered **not medically necessary** in all cases.

Systemic hyperbaric oxygen pressurization is considered **not medically necessary** for all other conditions not previously listed, including but not limited to the following:

A. Idiopathic Sudden Sensorineural Hearing Loss (ISSHL);
B. Osteonecrosis of the jaw when the cause is not radiation necrosis (osteoradionecrosis);
C. Preoperative treatment for jaw osteomyelitis;
D. Tinnitus;
E. Traumatic brain injury;

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

F. Venous stasis ulcers, pressure ulcers and non-pressure ulcers except in the subset of individuals noted above.

Coding

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Systemic HBOT:
When services are Medically Necessary:

CPT

99183	Physician or other qualified health care professional attendance and supervision of hyperbaric oxygen therapy, per session

HCPCS

G0277	Hyperbaric oxygen under pressure, full body chamber, per 30 minute interval

ICD-10 Procedure

5A05121	Extracorporeal hyperbaric oxygenation, intermittent
5A05221	Extracorporeal hyperbaric oxygenation, continuous

ICD-10 Diagnosis

A42.0-A42.9	Actinomycosis
A48.0	Gas gangrene
B36.0-B36.9	Other superficial mycoses
B37.0-B37.9	Candidiasis
B46.0-B46.9	Zygomycosis
B48.0-B48.8	Other mycoses, not elsewhere classified
B49	Unspecified mycosis
D62	Acute posthemorrhagic anemia
G06.0	Intracranial abscess and granuloma
H34.10-H34.13	Central retinal artery occlusion
H70.201-H70.229	Petrositis
I74.2-I74.9	Embolism and thrombosis of arteries (upper/lower extremities, iliac artery)
I96	Gangrene, not elsewhere classified
I99.9	Unspecified disorder of circulatory system

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

K62.7	Radiation proctitis
L08.0-L08.9	Other local infections of skin and subcutaneous tissue
L59.8-L59.9	Other disorders of the skin and subcutaneous tissue related to radiation
L88	Pyoderma gangrenosum
M27.2	Inflammatory conditions of jaws
M72.6	Necrotizing fasciitis
M79.9	Soft tissue disorder, unspecified
M79.A11-M79.A9	Nontraumatic compartment syndrome
M86.30-M86.69	Chronic osteomyelitis
M86.8X0-M86.8X9	Other osteomyelitis
M86.9	Osteomyelitis, unspecified
N30.40-N30.41	Irradiation cystitis
S07.0XXA-S07.9XXS	Crushing injury of head
S17.0XXA-S17.9XXS	Crushing injury of neck
S28.0XXA-S28.0XXS	Crushed chest
S38.001A-S38.1XXS	Crushing injury of abdomen, lower back, pelvis and external genitals
S45.001A-S45.099S	Injury of axillary artery
S45.801A-S45.999S	Unspecified injury of other blood vessels at shoulder and upper arm level
S47.1XXA-S47.9XXS	Crushing injury of shoulder and upper arm
T20.20XA-T20.29XS	Burn of second degree of head, face, and neck
T20.30XA-T20.39XS	Burn of third degree of head, face, and neck
T21.20XA-T21.29XS	Burn of second degree of trunk
T21.30XA-T21.39XS	Burn of third degree of trunk
T22.20XA-T22.299S	Burn of second degree of shoulder and upper limb, except wrist and hand
T22.30XA-T22.399S	Burn of third degree of shoulder and upper limb, expect wrist and hand
T23.201A-T23.299S	Burn of second degree of wrist and hand
T23.301A-T23.399S	Burn of third degree of wrist and hand
T24.201A-T24.299S	Burn of second degree of lower limb, except ankle and foot
T24.301A-T24.399S	Burn of third degree of lower limb, except ankle and foot
T25.211A-T25.299S	Burn of second degree of ankle and foot
T25.311A-T25.399S	Burn of third degree of ankle and foot
T31.0-T31.99	Burns classified according to extent of body surface involved
T57.3X1A-T57.3X4S	Toxic effect of hydrogen cyanide
T58.01XA-T58.94XS	Toxic effect of carbon monoxide
T65.0X1A-T65.0X4S	Toxic effect of cyanides
T66.XXXA-T66.XXXS	Radiation sickness, unspecified
T70.3XXA-T70.3XXS	Caisson disease [decompression sickness]
T79.0XXA-T79.0XXS	Air embolism (traumatic)
T79.A0XA-T79.A0XS	Compartment syndrome, unspecified

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

T79.A11A-T79.A9XS	Traumatic compartment syndrome
T86.820-T86.829	Complications of skin graft (allograft)(autograft)

When services may be Medically Necessary when criteria are met:
For the procedure codes listed above for the following diagnoses

ICD-10 Diagnosis	
E08.00-E11.9	Diabetes mellitus
E13.00-E13.9	Other specified diabetes mellitus
I73.89	Other specified peripheral vascular diseases
I73.9	Peripheral vascular disease, unspecified
L89.000-L89.95	Pressure ulcer
L97.101-L97.929	Non-pressure chronic ulcer of lower limb, not elsewhere classified
L98.411-L98.499	Non-pressure chronic ulcer of skin, not elsewhere classified
S01.00XS-S01.95XS	Open wound of head [range with 7th character S]
S11.011S-S11.95XS	Open wound of neck [range with 7th character S]
S21.001S-S21.95XS	Open wound of thorax [range with 7th character S]
S31.000S-S31.839S	Open wound of abdomen, lower back, pelvis and external genitals [range with 7th character S]
S41.001S-S41.159S	Open wound of shoulder and upper arm [range with 7th character S]
S51.001S-S51.859S	Open wound of elbow and forearm [range with 7th character S]

When services are Not Medically Necessary:
For the procedure codes listed above when criteria are not met or for all other diagnoses not listed, or when the code describes a procedure or situation designated in the Clinical Indications section as not medically necessary.

Topical HBOT:
When services are Not Medically Necessary:

HCPCS	
A4575	Topical hyperbaric oxygen chamber, disposable Note: topical HBOT is considered not medically necessary

ICD-10 Diagnosis	
	All diagnoses

Discussion/General Information

Systemic Hyperbaric Oxygen Therapy

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

Systemic hyperbaric oxygen therapy (HBOT) involves the inhalation of pure oxygen gas while enclosed in a high-pressure chamber (defined as pressure greater than standard atmospheric pressure). The pressures used are usually between 1.4 to 3.0 atmospheres absolute (atm abs or ATA). The therapy works by supersaturating the blood tissues with oxygen via increased atmospheric pressure as well as increased oxygen concentrations. Studies have demonstrated that this therapy increases the available oxygen to the body by 10 to 20 times normal levels. Treatment may be carried out in either a monoplace chamber pressurized with pure oxygen or in a larger, multiplace chamber pressurized with compressed air, in which case the individual receives pure oxygen by mask, head tent, or endotracheal tube. The number and duration of treatment sessions and the atmospheric pressure during treatment varies depending on the specific condition being treated, the severity of the condition, and the procedures developed by individual hospitals and clinics. These individual procedures vary widely and have made the evaluation of the efficacy of hyperbaric oxygen therapy difficult.

The position regarding systemic hyperbaric oxygen is based on guidelines published by the Undersea and Hyperbaric Medical Society (UHMS) (2019). These guidelines provide recommendations for indications where hyperbaric oxygen therapy has been demonstrated to provide clinical benefits. For the majority of these indications, there are adequate data to provide guidance regarding treatment duration, frequency and depth of pressurization. One exception is idiopathic sudden sensorineural hearing loss, which is discussed separately below.

Undersea and Hyperbaric Medical Society Guidelines:
The UHMS Hyperbaric Oxygen Therapy Committee (14th edition) recommended indications, along with the recommended treatment dose and number of treatment sessions is as follows:

- **Air or gas embolism** – Recommend using U.S. Navy Table 6 or equivalent. Treat 1 session to clinical plateau. Usual treatment involves 1-2 sessions, but may require 5-10.
- **Acute peripheral arterial insufficiency** – Recommend 2 to 3 treatments in the first 24 hours and then twice daily treatments until the tissue at risk subsides.
- **Acute thermal burns** – Recommend 2 to 2.4 ATA twice daily for up to 30 sessions.
- **Acute traumatic ischemia** – Use 2 to 2.4 ATA twice a day for 2 to 7 days.
- **Carbon monoxide poisoning** – Use up to 3 ATA for 1 to 3 sessions or to clinical plateau.
- **Central Retinal Artery Occlusion (CRAO)** – Recommend 2 to 2.8 ATA or U.S. Navy Table 6 or equivalent. Treat twice daily to clinical plateau, which typically occurs in less than a week, plus 3 days.
- **Clostridial myositis, Clostridial myonecrosis (Gas gangrene)-** Use 2.4 to 3 ATA 3 times in the first 24 hours and then use twice daily for the next 2 to 5 days.
- **Chronic refractory osteomyelitis –** Patients with refractory stage 3 or 4 osteomyelitis are most likely to benefit from adjunctive hyperbaric oxygen therapy, especially when complicated by adverse local or systemic factors. Use 2 to 3 ATA for 20 to 40 sessions.
- **Compartment syndrome** – Use 2 to 2.4 ATA twice a day for 2 to 7 days.
- **Compromised skin grafts and flaps –** Use 2 to 2.5 ATA twice daily for up to 20 sessions.

Historical

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

- **Crush injury** – Use 2 to 2.4 ATA twice a day for 2 to 7 days.
- **Cyanide poisoning** – Patients with cyanide poisoning frequently present with simultaneous carbon monoxide poisoning. Please see **"Carbon Monoxide Poisoning"** above for treatment recommendations.
- **Decompression sickness** – Use U.S. Navy Treatment Table 6 or equivalent for 1 session up to a clinical plateau. Typically no more than 1 to 2 treatment sessions are needed.
- **Diabetic lower extremity wounds, selected individuals and healing of other problem wounds** – Use 2 to 2.5 ATA daily for 3 to 4 weeks. For HBOT to continue, reevaluation at 30-day intervals must show continued progress in healing.
- **Intracranial abscess (includes cerebral abscess, subdural empyema, and epidural empyema**) – Treatment should be administered at 2.0-2.5 ATA of oxygen 1 to 2 times a day for up to 3 weeks.
- **Necrotizing soft-tissue infections** – Use 2 to 2.5 ATA twice daily until stabilization occurs.
- **Radiation Necrosis** –
    1. **Mandibular osteoradionecrosis, laryngeal necrosis, other soft tissue head and neck, chest wall necrosis, radiation cystitis, radiation proctitis, miscellaneous abdominal pelvic injuries, cutaneous necrosis** – 2 to 2.4 ATA daily for 90 minutes.
    2. **Neoadjuvant hyperbaric oxygen therapy before dental extractions** – 2 to 2.4 ATA, typically 20 treatments before extraction and 10 treatments after.
- **Sudden sensorineural heating loss** – Recommend 2 to 2.4 ATA for 10 to 20 sessions. (*Note: HBOT for idiopathic sudden sensorineural heating loss is considered "not medically necessary", see above "Clinical Indications" section*).
- **Severe Anemia** – Use 2 to 3 ATA for 3 or 4 times a day until there is replacement of red blood cells by regeneration or transfusion.

In 2012, the American Academy of Neurology and the American Headache Society released guidelines regarding the use of complementary treatments for episodic migraine prevention in adults (Holland, 2012). These guidelines concluded that the data are conflicting or inadequate to support or refute hyperbaric oxygen for migraine prevention.

Several systematic reviews and meta-analyses on HBOT for diabetic-related lower limb ulcers have recently been published (Brouwer, 2019; Golledge, 2019; Lalieu, 2020; Sharma, 2021). Most recently, Sharma and colleagues (2021) included 12 randomized controlled trials (RCTs) and 2 controlled non-randomized trials comparing HBOT and standard treatment for treatment of diabetic foot ulcers. In a pooled analysis of 11 studies reporting complete ulcer healing, the number of completely healed ulcers was significantly higher after HBOT than after standard treatment (odds ratio [OR], 0.29; 95% confidence interval [CI], 0.14 to 0.61; p<0.001). Similarly, a pooled analysis of 7 trials found a significantly lower rate of major amputation in individuals treated with HBOT compared with standard therapy (relative risk [RR], 0.60, 95% CI, 0.39 to 0.92; p=0.02). There was not a statistically significant rate of minor amputation in the HBOT and standard therapy groups in a pooled analysis of 8 trials (RR, 0.82; 95% CI, 0.93 to 1.90; p=012).

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

As stated above, for continued treatment of wounds with HBOT, the UHMC recommends re-evaluation at 30-day intervals to show continued progress in healing. In an analysis of data from two trials with individuals who had diabetic foot ulcers or venous leg ulcers, Cardinal and colleagues (2008) found that wound surface area significantly predicted the rate of wound healing at 12 weeks. A 20% to 40% reduction of wound area in 2 and 4 weeks is often cited as a likely and reliable predictive indicator of healing (Flanagan, 2003).

A 2021 systematic review and meta-analysis on HBOT for necrotizing soft-tissue infections (Hedetoft, 2021) identified 31 comparative studies, 10 of which were judged to be at high risk of bias and were excluded from the quantitative analysis. There was a total of 48,744 participants in the 21 included studies, 1237 of which (2.5%) received HBOT. A pooled analysis of the 21 studies found a significantly lower odds of in-hospital mortality in individuals who received HBOT versus those who did not receive HBOT (OR, 0.44; 95% CI, 0.33 to 0.58).

Tinnitus and Idiopathic Sudden Sensorineural Hearing Loss

In October of 2011, the UHMS added ISSHL to their list of indications. The rationale for the UHMS recommendation on ISSHL was based upon the findings of a 2012 Cochrane Review by Bennett and colleagues. The Cochrane review identified seven small RCTs, which were generally considered to be of low quality. Although the Cochrane review stated that, "for people with acute ISSHL, the application of HBOT significantly improved hearing", as noted by the UHMS, the Cochrane review's conclusions went on to state that the clinical significance of HBOT for treatment of ISSHL "remains unclear". The 2019 UHMS guidelines also cited the Cvorovic (2013) RCT in the section on salvage therapy for ISSHL. The Cvorovic (2013) study involved 50 individuals who had failed primary therapy for SSHL. Participants were assigned to either HBOT (n=25) or intratympanic steroid treatment. There were significant differences between hearing thresholds at all frequencies before and after the HBOT. Similarly, there were significant differences between hearing thresholds at most frequencies (except 2 kHz) before and after the treatment in the intratympanic treatment group. There were no significant differences between HBOT and steroid treatment at 4 of the 5 frequencies. At 2 kHz, HBOT was found to be superior to steroid treatment.

The 2012 Cochrane review, discussed above, also addressed HBOT for treatment of tinnitus. Only two trials reported mean improvement in tinnitus or the proportion of individuals with tinnitus and findings were mixed. Data were not suitable for pooling. The review concluded that no beneficial effect of HBOT on tinnitus was found.

In 2019, the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) published an updated clinical practice guideline on sudden hearing loss. The guideline group supported hyperbaric oxygen therapy combined with steroid therapy for treatment of sudden sensorineural hearing loss. For initial treatment, they recommend initiating hyperbaric oxygen therapy within 2 weeks of the condition's onset and, for salvage therapy, within 1 month of onset. The recommendations differ from those in the 2012 guideline in that HBOT was only considered an option when combined with steroid therapy. The recommendation on hyperbaric oxygen therapy was

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

rated "Grade B, systematic review of RCTs with methodological limitations" and was based primarily on the 2012 Cochrane review by Bennett and colleagues, discussed above.

A 2018 systematic review and meta-analysis (Rhee 2018) addressed HBOT versus medical therapy alone for treatment of ISSHL. The authors identified 3 RCTs and 16 non-randomized comparative studies, published through February 2018, that compared HBOT plus medical therapy versus medical therapy alone. Fourteen of the 16 non-randomized studies were retrospective. In a pooled analysis, the rate of complete hearing recovery was 264 of 897 cases (29.4%) in the HBOT plus medical therapy group and 241 of 1167 (20.7%) in the medical therapy alone group. A meta-analysis significantly favored the HBOT plus medical therapy group for this outcome (pooled OR, 1.61; 95% CI: 1.05 to 2.44). The outcome variable assessing any hearing recovery also significantly favored the HBOT plus medical therapy group (pooled OR, 1.43, 95% CI, 1.20 to 1.66). There was significant heterogeneity for both outcomes; thus, a random effects model was used. A limitation of the meta-analysis is that 16 of the 19 studies identified were non-randomized, and 14 were retrospective and these are subject to selection bias and other potential biases.

A more recent systematic review and meta-analysis, published by Lei and colleagues in 2021, was limited to studies comparing HBOT and intratympanic steroids. The investigators included six studies, three RCTs and three retrospective cohort studies. In a pooled analysis, the authors did not find a statistically significant difference between HBOT versus intratympanic steroid treatment in the proportion of individuals with hearing improvement (RR, 1.09; 95% CI, 0.83 to 1.42; p=0.55).

Several RCTs have compared HBOT and medical therapy, with mixed results. Cho and colleagues (2018) randomized 60 individuals with severe to profound ISSHL to medical therapy alone (oral steroids plus intratympanic steroids) alone and medical therapy plus HBOT. Hearing improvement was assessed 3 months after treatment using the AAO-HNS criteria to determine treatment success. Using these criteria, no significant differences in hearing improvement were found between groups. In addition, there were no significant differences between groups in percent word discrimination score (WDS) gain at 1 month and 2 months, but WDS improvement was significantly higher in the study group at 3 months (p=0.035). Tong and colleagues (2020) randomly assigned 136 individuals with unilateral ISSHL to medical therapy alone (oral prednisone, vitamins and traditional Chinese drugs) or medical therapy plus HBOT. Treatment success was defined as complete recovery, marked improvement or slight improvement in hearing, an improvement of at least 15 dB. Using this definition, the success rate was 60.6% (40 of 66) in the group receiving HBOT and 42.9% (30 of 70) in the group receiving medical treatment only, p<0.05.

Overall, the evidence supporting the use of HBOT for the treatment of tinnitus and ISSHL is insufficient to draw reasonable conclusions about the efficacy of this therapy.

Other conditions

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

The use of HBOT has been proposed for a wide range of conditions in addition to those addressed by the UHMS. There are little clinical data to support HBOT for these other indications, which include cerebral edema and heat trauma. Several potential indications for which there are published RCTs are discussed below.

Inflammatory Bowel Disease

A 2021 systematic review of studies on HBOT for treating inflammatory bowel disease (IBD) by McCurdy and colleagues included a total of 19 studies. Of these, 3 were RCTs (Dulai 2018; Dulai 2020; Pagoldh, 2016) and the remaining 16 were case series. All 3 of the RCTs included individuals with ulcerative colitis. The RCTs had sample sizes between 10 and 20 individuals. The authors did not report a pooled analysis of RCT data.

The two studies by Dulai and colleagues both included individuals with ulcerative colitis who were hospitalized with acute flares. Dulai (2018) compared 3 days of HBOT to sham treatment and found a significantly higher rate of clinical remission, the primary outcome, at day 5 in the actively treated group (5 of 10 [50%] versus 0 of 8 [0%], p=0.08). Dulai (2020) treated all of the 20 enrolled individuals with 3 days of HBOT and the 11 individuals who responded at 3 days were randomized to an additional 2 days of HBOT or no further HBOT treatment. At day 10, compared with the 5 individuals treated for 3 days, the 6 individuals treated for 5 days had significantly lower mean partial Mayo scores (1.3 versus 4.2 points, p=0.011) and stool frequency scores (SFS) (0.7 versus 2.6 points, p=0.001), with no significant difference in rectal bleeding scores (RBS) (0.7 versus 1.6 points, p=0.188). Both studies had small sample sizes and short-term follow-up. The 2018 study was described as a pilot study and the study was terminated early due to the difficulty recruiting participants; the 2020 study was described as an exploratory study for a larger RCT.

In 2016, Glover and colleagues published an RCT on HBOT for individuals with chronic bowel dysfunction following pelvic radiotherapy; this study was not included in the McCurdy systematic review. The study randomized 55 individuals to HBOT and 29 to a sham control treatment. Active treatment included 40 90-minute sessions. The co-primary endpoints of the study were 12-month change in gastrointestinal symptoms using the inflammatory bowel disease questionnaire (IBDQ) and change in rectal bleeding score. There were not statistically significant differences between groups for either primary outcome. Median change from baseline to 12 months on the IBDQ scores was 3.5 in the HBOT group and 4 in the sham group, p=0.50. Median change in the rectal bleeding score was 3 in the HBOT group and 1 in the sham group, p=0.092.

Spinal Cord Injury

In 2021, Huang and colleagues published a systematic review and meta-analysis of RCTs evaluating HBOT for individuals with spinal cord injury. The review included 11 RCTs, 2 of which were published in English and 9 in Chinese. The primary outcomes were the American Spinal Injury Association (ASIA) motor and sensory scores. There was a high degree of heterogeneity among studies. Control groups included drug therapy, surgical treatment, rehabilitation therapy or a combination of the above. A pooled analysis of 10 trials found that motor function scores

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

improved significantly more with HBOT versus a control intervention (mean difference [MD], 15.84; 95% CI, 9.04 to 22.64). Similarly, a pooled analysis of 6 trials found that sensory scores improved significantly more with HBOT compared with control (MD, 66.30; 95% CI, 53.44 to 79.16). Limitations of the analysis include the small number of participants in individual trials (ranging from n=40 to n=164) and heterogeneity among studies, such as different control interventions and variability in the HBOT protocols.

Traumatic Brain Injury

There is also insufficient evidence on traumatic brain injury. A 2012 Cochrane review included seven RCTs evaluating HBOT as an adjunctive treatment of traumatic brain injury. The review concluded that although HBOT may reduce the risk of death and result in statistically significant improvement in scores on the Glasgow Outcome Scale, there is a lack of evidence that the degree of improvement is clinically significant.

Several RCTs on HBOT for post-concussion symptoms due to traumatic brain injury were published after the Cochrane review. Miller and colleagues (2015) randomized 72 individuals to 40 HBOT sessions at 1.5 ATA, 40 sham treatments with room air at 1.2 ATA, or no supplemental treatments. While a significant difference was reported between both supplemental groups and the no-supplemental group (p=0.008), no differences were reported between the hyperbaric and the sham treatment groups. A 2020 crossover trial by Harch and colleagues included 63 individuals who received 40 HBOT sessions over 2 months or no treatment, in random order. Eight of 14 outcome variables improved significantly more in the treatment group than the control group. These included depression and post-traumatic anxiety symptoms.

Topical and Limb Specific Hyperbaric Oxygen Therapy

Topical HBOT involves the delivery of pure oxygen directly to an open, moist wound at a pressure slightly higher than atmospheric pressure. Limb-specific HBOT involves the use of a plastic container into which the limb to be treated is inserted and then sealed with pliable gaskets. The limb is then subjected to increased pressure and oxygen concentrations. The rest of the body is not exposed to this treatment. Topical and systemic HBOT are distinct technologies and are applied by different methods. As such, the outcomes associated with systemic HBOT cannot be extrapolated to topical therapy. Topical HBOT has been primarily evaluated as a treatment of chronic wounds, but other conditions have also been proposed as possible indications. There is currently insufficient published data from controlled trials to permit conclusions regarding topical HBOT. Additionally, evidence in the form of data from in vitro studies of limb specific HBOT have failed to demonstrate that this treatment method increases tissue oxygen tension beyond the superficial dermis, a key factor in the efficacy of HBOT.

Definitions

Anemia: A reduction in the number of circulating red blood cells or in the total hemoglobin content of the cells.

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

Atmospheres absolute (ATA): The combination (or the sum) of the atmospheric pressure and the hydrostatic pressure is called atmospheres absolute (ATA). In other words, the ATA or atmospheres absolute is the total weight of the water and air above us.

Carbon monoxide poisoning: Toxicity that results from inhalation of small amounts of carbon monoxide (a poisonous gas) over a long period of time or from large amounts inhaled for a short time, which leads to decreased oxygen delivery to the body and cerebral toxicity.

Chronic: Of a long duration; a disease that persists or progresses over time.

Cierny-Mader system for osteomyelitis:
Anatomic type:
- Stage 1: medullary osteomyelitis
- Stage 2: superficial osteomyelitis
- Stage 3: localized osteomyelitis
- Stage 4: diffuse osteomyelitis

Physiologic class:
- A host: healthy
- B host:
  - Bs: systemic compromise
  - Bl: local compromise
  - Bls: local and systemic compromise
- C host: treatment worse than the disease

Compartmental syndrome: Any condition in which a structure, such as a nerve or tendon, is being constricted in a space and is no longer able to move freely in the compartment.

Decompression sickness: A condition that develops in divers subjected to rapid reduction of air pressure after coming to the surface following exposure to compressed air.

Gangrene: The death of tissue or bone, usually resulting from a deficient or absent blood supply.

Gas embolism: Obstruction of a blood vessel by a gas bubble.

Ischemia: A local and temporary deficiency of blood supply due to an obstruction of the circulation.

Limb specific hyperbaric oxygen: A therapy that involves sealing an individual's leg or arm into an airtight container and exposing that limb to pure oxygen greater than one atmosphere of pressure.

Historical

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Mycosis: Any condition caused by a fungus.

Necrosis: A condition where cells or tissues are dead or dying.

Osteomyelitis: Inflammation of the bone due to infection.

Osteoradionecrosis: Death of bone following irradiation.

Prophylactic: Any agent or treatment that contributes to the prevention of infection or disease.

Pyoderma gangrenosum: A condition of the skin leading to open ulcers.

Systemic hyperbaric oxygen: A therapy that involves sealing an individual inside a room or container, then exposing the individual to pure oxygen at greater than one atmosphere of pressure.

Thermal: Related to heat.

Tinnitus: A condition where an individual has the perception of sound in their head when no outside sound is present. It is typically referred to as "ringing in the ears" or "head noise," but other forms of sound have been described such as hissing, roaring, pulsing, whooshing, chirping, whistling and clicking.

Topical hyperbaric oxygen: A therapy that involves sealing skin wounds under a plastic cover and then exposing the wound to pure oxygen at greater than one atmosphere of pressure; an alternate form of this therapy involves the application of a mist of water droplets to the wound that are saturated with dissolved oxygen.

References

Peer Reviewed Publications:

1. Brouwer RJ, Lalieu RC, Hoencamp R et al. A systematic review and meta-analysis of hyperbaric oxygen therapy for diabetic foot ulcers with arterial insufficiency. J Vasc Surg. 2020;71(2):682-692.
2. Cardinal M, Eisenbud DE, Phillips T et al. Early healing rates and wound area measurements are reliable predictors of later complete wound closure. Wound Repair Regen. 2008; 16(1):19-22.
3. Cho I, Lee HM, Choi SW et al. Comparison of two different treatment protocols using systemic and intratympanic steroids with and without hyperbaric oxygen therapy in patients with severe to profound idiopathic sudden sensorineural hearing loss: A randomized controlled trial. Audio Neurootol. 2018;23(4):199-207.

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

4. Chong KT, Hampson NB, Corman JM. Early hyperbaric oxygen therapy improves outcome for radiation-induced hemorrhagic cystitis. Urology. 2005; 65(4):649-653.
5. Cierny G 3rd, Mader JT, Penninck JJ. A clinical staging system for adult osteomyelitis. Clin Orthop Relat Res. 2003; (414):7-24.
6. Clarke RE, Tenorio LM, Hussey JR, et al. Hyperbaric oxygen treatment of chronic refractory radiation proctitis: a randomized and controlled double-blind crossover trial with long-term follow-up. Int J Radiat Oncol Biol Phys. 2008; 72(1):134-143.
7. Cvorovic L, Jovanovic MB, Milutinovic Z, et al. Randomized prospective trial of hyperbaric oxygen therapy and intratympanic steroid injection as salvage treatment of sudden sensorineural hearing loss. Otol Neurotol. 2013; 34(6):1021-1026.
8. Dulai PS, Buckey JC Jr, Raffals LE et al. Hyperbaric oxygen therapy is well tolerated and effective for ulcerative colitis patients hospitalized for moderate-severe flares: a phase 2A pilot multi-center, randomized, double-blind, sham-controlled trial. Am J Gastroenterol. 2018 Oct; 113(10):1516-1523.
9. Dulai PS, Raffals LE, Hudesman D et al. A phase 2B randomized trial of hyperbaric oxygen therapy for ulcerative colitis patients hospitalized for moderate to severe flares. Aliment Pharmacol Ther. 2020 Sep; 52(6):955-963.
10. Efrati S, Fishlev G, Bechor Y, et al. Hyperbaric oxygen induces late neuroplasticity in post stroke patients--randomized, prospective trial. PLoS One. 2013; 8(1):e53716.
11. Faunø Thrane J, Ovesen T. Scarce evidence of efficacy of hyperbaric oxygen therapy in necrotizing soft tissue infection: a systematic review. Infect Dis (Lond). 2019; 51(7):485-492.
12. Fife CE, Buyukcakir C, Otto G, et al. Factors influencing the outcome of lower-extremity diabetic ulcers treated with hyperbaric oxygen therapy. Wound Repair Regen. 2007; 15(3):322-331.
13. Flanagan, M. Improving accuracy of wound measurement in clinical practice. Ostomy/Wound Management. 2003 Oct;49(10):28-40.
14. Freiberger JJ, Padilla-Burgos R, McGraw T, et al. What is the role of hyperbaric oxygen in the management of bisphosphonate-related osteonecrosis of the jaw: a randomized controlled trial of hyperbaric oxygen as an adjunct to surgery and antibiotics. J Oral Maxillofac Surg. 2012; 70(7):1573-1583.
15. Glover M, Smerdon GR, Andreyev HJ et al. Hyperbaric oxygen for patients with chronic bowel dysfunction after pelvic radiotherapy (HOT2): a randomised, double-blind, sham-controlled phase 3 trial. Lancet Oncol. 2016; 17(2):224-233.
16. Golledge J, Singh TP. Systematic review and meta-analysis of clinical trials examining the effect of hyperbaric oxygen therapy in people with diabetes-related lower limb ulcers. Diabet Med. 2019; 36(7):813-826.
17. Harch PG, Andrews SR, Rowe CJ et al. Hyperbaric oxygen therapy for mild traumatic brain injury persistent postconcussion syndrome: a randomized controlled trial. Med Gas Res. 2020;10(1):8-20.
18. Hedetoft M, Bennett MH, Hyldegaard O. Adjunctive hyperbaric oxygen treatment for necrotising soft-tissue infections: A systematic review and meta-analysis. Diving Hyperb Med. 2021 Mar 31; 51(1):34-43.
19. Huang L, Zhang Q, Fu C, Liang Z, Xiong F, He C, Wei Q. Effects of hyperbaric oxygen therapy on patients with spinal cord injury: A systematic review and meta-analysis of randomized controlled trials. J Back Musculoskelet Rehabil. 2021 Mar 30. Epub ahead of print.

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

20. Igor S, Mirko T, Dalibor P, et al. Hyperbaric oxygenation accelerates prosthetic rehabilitation of lower limb amputees. Undersea Hyperb Med. 2013; 40(3):289-297.
21. Lacey DJ, Stolfi A, Pilati LE. Effects of hyperbaric oxygen on motor function in children with cerebral palsy. Ann Neurol. 2012; 72(5):695-703.
22. Lalieu RC, Brouwer RJ, Ubbink DT et al. Hyperbaric oxygen therapy for nonischemic diabetic ulcers: A systematic review. Wound Repair Regen. 2020;28(2):266-275.
23. Landau Z, Schattner A. Topical hyperbaric oxygen and low energy laser therapy for chronic diabetic foot ulcers resistant to conventional treatment. Yale J Biol Med. 2001; 74(2):95-100.
24. Lei X, Feng Y, Xia L, Sun C. Hyperbaric oxygen therapy versus intratympanic steroid for salvage treatment of sudden sensorineural hearing loss: A systematic review and meta-analysis. Otol Neurotol. 2021;;42(8):e980-e986.
25. Löndahl M, Katzman P, Nilsson A, Hammarlund C. Hyperbaric oxygen therapy facilitates healing of chronic foot ulcers in patients with diabetes. Diabetes Care. 2010; 33(5):998-1003.
26. McCurdy J, Siw KCK, Kandel R et al. The effectiveness and safety of hyperbaric oxygen therapy in various phenotypes of inflammatory bowel disease: Systematic review with meta-analysis. Inflamm Bowel Dis. 2021 May 18: Epub ahead of print.
27. Miller RS, Weaver LK, Bahraini N, et al. Effects of hyperbaric oxygen on symptoms and quality of life among service members with persistent postconcussion symptoms: a randomized clinical trial. JAMA Intern Med. 2015; 175(1):43-52.
28. Oscarsson N, Müller B, Rosén A et al. Radiation-induced cystitis treated with hyperbaric oxygen therapy (RICH-ART): a randomised, controlled, phase 2-3 trial. Lancet Oncol. 2019;20(11):1602-1614.
29. Pagoldh M, Hultgren E, Arnell P et al. Hyperbaric oxygen therapy does not improve the effects of standardized treatment in a severe attack of ulcerative colitis: a prospective randomized study. Scand J Gastroenterol. 2013; 48(9):1033-1040.
30. Peng Z, Wang S, Huang X, Xiao P. Effect of hyperbaric oxygen therapy on patients with herpes zoster. Undersea Hyperb Med. 2012; 39(6):1083-1087.
31. Rhee TM, Hwang D, Lee JS, et al. Addition of hyperbaric oxygen therapy vs medical therapy alone for idiopathic sudden sensorineural hearing loss: A systematic review and meta-analysis. JAMA Otolaryngol Head Neck Surg. 2018; 144(12):1153-1161.
32. Rusyniak DE, Kirk MA, May JD, et al. Hyperbaric oxygen therapy in acute ischemic stroke: results of the Hyperbaric Oxygen in Acute Ischemia Stroke Trial Pilot Study. Stroke. 2003; 34(2):571-574.
33. Sampanthavivat M, Singkhwa W, Chaiyakul T, et al. Hyperbaric oxygen in the treatment of childhood autism: a randomised controlled trial. Diving Hyperb Med. 2012; 42(3):128-133.
34. Schoen PJ, Raghoebar GM, Bouma J, et al. Rehabilitation of oral function in head and neck cancer patients after radiotherapy with implant-retained dentures: effects of hyperbaric oxygen therapy. Oral Oncol. 2007; 43(4):379-388.
35. Sharma R, Sharma SK, Mudgal SK et al. Efficacy of hyperbaric oxygen therapy for diabetic foot ulcer, a systematic review and meta-analysis of controlled clinical trials. Sci Rep. 2021; 11(1):2189.

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

36. Steele J, Zutshi D, Bradley WG. Negative results of a phase II study of hyperbaric oxygen therapy for amyotrophic lateral sclerosis. Amyotroph Lateral Scler. 2007; 8(5):274-275.
37. Tong B, Niu K, Ku W et al. Comparison of therapeutic results with/without additional hyperbaric oxygen therapy in idiopathic sudden sensorineural hearing loss: A randomized prospective study. Audiol Neurootol. 2020 Jun 12:1-6. Epub before print.
38. Van Meter KW. A systematic review of the application of hyperbaric oxygen in the treatment of severe anemia: an evidence-based approach. Undersea Hyperb Med. 2005; 32(1):61-83.
39. Weaver LK, Hopkins RO, Chan K, et al. Hyperbaric oxygen for acute carbon monoxide poisoning. N Engl J Med. 2002; 347(14):1057-1067.
40. Wolf G, Cifu D, Baugh L, et al. The effect of hyperbaric oxygen on symptoms after mild traumatic brain injury. J Neurotrauma. 2012; 29(17):2606-2612.
41. Yogaratnam JZ, Laden G, Guvendik L, et al. Hyperbaric oxygen preconditioning improves myocardial function, reduces length of intensive care stay, and limits complications post coronary artery bypass graft surgery. Cardiovasc Revasc Med. 2010; 11(1):8-19.

Government Agency, Medical Society, and Other Authoritative Publications:

1. Agency for Healthcare Research and Quality. Hyperbaric Oxygen Therapy in the Treatment of Hypoxic Wounds and Diabetic Wounds of the Lower Extremities. Technology Assessment 2001.
2. American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Carbon Monoxide Poisoning, Wolf SJ, Maloney GE, Shih RD, Shy BD, Brown MD. Clinical Policy: Critical issues in the evaluation and management of adult patients presenting to the emergency department with acute carbon monoxide poisoning. Ann Emerg Med. 2017; 69(1):98-107.e6.
3. Bennett MH, Feldmeier J, Smee R, Milross C. Hyperbaric oxygenation for tumour sensitisation to radiotherapy. Cochrane Database Syst Rev. 2018;(4):CD005007.
4. Bennett MH, French C, Schnabel A, et al. Normobaric and hyperbaric oxygen therapy for the treatment and prevention of migraine and cluster headache. Cochrane Database Syst Rev. 2015;(12):CD005219.
5. Bennett MH, Heard R. Hyperbaric oxygen therapy for multiple sclerosis. Cochrane Database Syst Rev. 2004;(1):CD003057.
6. Bennett MH, Kertesz T, Perleth M, et al. Hyperbaric oxygen for idiopathic sudden sensorineural hearing loss and tinnitus. Cochrane Database Syst Rev. 2012;(10):CD004739.
7. Bennett MH, Lehm JP, Mitchell SJ, Wasiak J. Recompression and adjunctive therapy for decompression illness. Cochrane Database Syst Rev. 2012;(5):CD005277.
8. Bennett MH, Stanford RE, Turner R. Hyperbaric oxygen therapy for promoting fracture healing and treating fracture non-union. Cochrane Database Syst Rev. 2012;(11):CD004712.
9. Bennett MH, Trytko B, Jonker B. Hyperbaric oxygen therapy for the adjunctive treatment of traumatic brain injury. Cochrane Database Syst Rev. 2012;(12):CD004609.
10. Bennett MH, Weibel S, Wasiak J, et al. Hyperbaric oxygen therapy for acute ischaemic stroke. Cochrane Database Syst Rev. 2014; 11:CD004954.

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

11. Bennett MH, Weibel S, Wasiak J, et al. Hyperbaric oxygen therapy for acute ischaemic stroke. Cochrane Database Syst Rev. 2014;(11):CD004954.
12. Beth-Tasdogan NH1, Mayer B, Hussein H, Zolk O. Interventions for managing medication-related osteonecrosis of the jaw. Cochrane Database Syst Rev. 2017;(10):CD012432.
13. Buckley NA, Juurlink DN, Isbister G, et al. Hyperbaric oxygen for carbon monoxide poisoning. Cochrane Database Syst Rev. 2011;(4):CD002041.
14. Centers for Medicare and Medicaid Services. National Coverage Determinations. Available at: https://www.cms.gov/medicare-coverage-database/indexes/ncd-alphabetical-index.aspx?bc=BAAAAAAAAAAA. Accessed on August 11, 2021.
    - Hyperbaric Oxygen Therapy. NCD #20.29. Effective April 3, 2017.
15. Chandrasekhar SS, Tsai BS, Schwartz SR. Clinical practice guideline: sudden hearing loss. Otolaryngol Head Neck Surg. 2019; 161(IS):S1-45.
16. Eskes A, Vermeulen H, Lucas C, Ubbink DT. Hyperbaric oxygen therapy for treating acute surgical and traumatic wounds. Cochrane Database Syst Rev. 2013;(12):CD008059.
17. Esposito M, Worthington HV. Interventions for replacing missing teeth: hyperbaric oxygen therapy for irradiated patients who require dental implants. Cochrane Database Syst Rev. 2013;(9):CD003603.
18. Holland NJ, Bernstein JM, Hamilton JW. Hyperbaric oxygen therapy for Bell's palsy. Cochrane Database Syst Rev. 2012;(2):CD007288.
19. Holland S, Silberstein SD, Freitag F, et al.; Quality Standards Subcommittee of the American Academy of Neurology and the American Headache Society. Evidence-based guideline update: NSAIDs and other complementary treatments for episodic migraine prevention in adults: report of the Quality Standards Subcommittee of the American Academy of Neurology and the American Headache Society. Neurology. 2012; 78(17):1346-353.
20. Kranke P, Bennett MH, Martyn-St James M, et al. Hyperbaric oxygen therapy for chronic wounds. Cochrane Database Syst Rev. 2015;(6):CD004123.
21. Levett D, Bennett MH, Millar I. Adjunctive hyperbaric oxygen for necrotizing fasciitis. Cochrane Database Syst Rev. 2015;(1):CD007937.
22. National Institutes of Health Consensus Development Conference Statement: Oral Complications of Cancer Therapies: Diagnosis, Prevention, and Treatment. 1989 (update 1995). Bethesda, MD.
23. Phillips JS, Jones SE. Hyperbaric oxygen as an adjuvant treatment for malignant otitis externa. Cochrane Database Syst Rev. 2013;(5):CD004617.
24. Stachler RJ, Chandrasekhar SS, Archer SM, et al.; American Academy of Otolaryngology-Head and Neck Surgery. Clinical practice guideline: sudden hearing loss. Otolaryngol Head Neck Surg. 2012; 146(3 Suppl):S1-35.
25. Undersea and Hyperbaric Medical Society. Bennett M, Heard R. UHMS position statement: treatment of multiple sclerosis with hyperbaric oxygen therapy. Undersea Hyperb Med. 2001; 28(3):117-122.
26. Undersea and Hyperbaric Medical Society. Feldmeier JJ, Hopf HW, Warriner RA 3rd, et al. UHMS position statement: topical oxygen for chronic wounds. Undersea Hyperb Med. 2005; 32(3):157-168.

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

27. Undersea and Hyperbaric Medical Society. Hyperbaric Oxygen Therapy Indications, 14th Edition. Best Publishing Company (North Palm Beach, FL). 2019.
28. Undersea and Hyperbaric Medical Society. Hyperbaric Oxygen Therapy Indications, 13th Edition (2014). https://www.uhms.org/images/indications/UHMS_HBO2_Indications_13th_Ed._Front_Matter__References.pdf. Accessed on August 11, 2021.
29. Undersea and Hyperbaric Medical Society. Idiopathic Sudden Sensorineural Hearing Loss (2011). Available at: https://www.uhms.org/14-idiopathic-sudden-sensorineural-hearing-loss-new-approved-on-october-8-2011-by-the-uhms-board-of-directors.html. Accessed on August 11, 2021.
30. United States Navy Dive Manual, Revision 7. 2016.. Available at: https://www.navsea.navy.mil/Portals/103/Documents/SUPSALV/Diving/US%20DIVING%20MANUAL_REV7.pdf?ver=2017-01-11-102354-393. Accessed on August 11, 2021.
31. Yang Z, Hu J, Qu Y, Sun F, et al. Interventions for treating gas gangrene. Cochrane Database Syst Rev. 2015;(12):CD010577.
32. Xiao Y, Wang J, Jiang S, Luo H. Hyperbaric oxygen therapy for vascular dementia. Cochrane Database Syst Rev. 2012;(7):CD009425.

Websites for Additional Information

1. National Library of Medicine. Medical Encyclopedia. Hyperbaric oxygen therapy. Available at: http://www.nlm.nih.gov/medlineplus/ency/article/002375.htm. Accessed on August11, 2021.

Index

The use of specific product names is illustrative only. It is not intended to be a recommendation of one product over another, and is not intended to represent a complete listing of all products available.

History

Status	Date	Action
Revised	11/11/2021	Medical Policy & Technology Assessment Committee (MPTAC) review. In section of medically necessary statement on chronic non-healing wounds, added

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.

Historical

		bullet point on criteria for continued treatment beyond 30 days. Updated Discussion/General Information and References sections.
Reviewed	11/05/2020	MPTAC review. Updated Discussion/General Information and References sections. Reformatted Coding section.
	05/19/2020	In Discussion section, added note to the section on Undersea and Hyperbaric Medicine society guidelines that Idiopathic Sudden Sensorineural Hearing Loss (ISSHL) is considered 'not medically necessary'.
Reviewed	11/07/2019	MPTAC review. Updated Discussion/General Information and References sections.
Revised	01/24/2019	MPTAC review. Updated Clinical Indications with additional details on treatment of wounds and jaw conditions consistent with Undersea and Hyperbaric Medicine Society recommendations. Parentheses with refractory osteomyelitis removed from chronic refractory osteomyelitis in medically necessary statement. Added to not medically necessary statement: Idiopathic Sudden Sensorineural Hearing Loss (ISSHL), osteonecrosis of the jaw when the cause is not radiation necrosis (osteoradionecrosis), preoperative treatment for jaw osteomyelitis, traumatic brain injury and venous stasis ulcers, pressure ulcers and non-pressure ulcers except in the subset of individuals noted in the medically necessary statement. Discussion/General Information and References updated.
New	07/26/2018	MPTAC review. Initial document development. Moved content of MED.00005 Hyperbaric Oxygen Therapy (Systemic/Topical) to new clinical utilization management guideline document with the same title.

Historical

Federal and State law, as well as contract language including definitions and specific coverage provisions/exclusions, and Medical Policy take precedence over Clinical UM Guidelines and must be considered first in determining eligibility for coverage. The member's contract benefits in effect on the date that services are rendered must be used. Clinical UM Guidelines, which address medical efficacy, should be considered before utilizing medical opinion in adjudication. Medical technology is constantly evolving, and we reserve the right to review and update Clinical UM Guidelines periodically. Clinical UM guidelines are used when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether or not to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the back of the member's card.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only – American Medical Association

Healthy Blue is a Medicaid product offered by Missouri Care, Inc., a MO HealthNet Managed Care health plan contracting with the Missouri Department of Social Services. Healthy Blue is administered statewide by Missouri Care, Inc. and administered in the Kansas City service region by Missouri Care, Inc. in cooperation with Blue Cross and Blue Shield of Kansas City. Missouri Care, Inc. and Blue Cross and Blue Shield of Kansas City are both independent licensees of the Blue Cross and Blue Shield Association.