



Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

SAPHENOUS VEINS

Great or Small Saphenous Veins

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider treatment of the great or small saphenous veins by surgery (ligation and stripping), endovenous thermal ablation (radiofrequency or laser), microfoam sclerotherapy or cyanoacrylate adhesive for symptomatic varicose veins/venous insufficiency to be **eligible for coverage**** when the following criteria have been met:

Patient Selection Criteria

Coverage eligibility will be met when all of the following criteria are met:

There is demonstrated saphenous reflux and CEAP [Clinical, Etiology, Anatomy, Pathophysiology] class C2 or greater; AND

There is documentation of one or more of the following indications:

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- Ulceration secondary to venous stasis; or
- Recurrent superficial thrombophlebitis; or
- Hemorrhage or recurrent bleeding episodes from a ruptured superficial varicosity; or
- Persistent pain, swelling, itching, burning, or other symptoms are associated with saphenous reflux, AND the symptoms significantly interfere with activities of daily living, and conservative management including compression therapy for at least three months has not improved the symptoms.

When Services Are Considered Not Medically Necessary

Based on review of available data, the Company considers the use of treatment for great or small saphenous veins by surgery, endovenous radiofrequency or laser ablation, or microfoam sclerotherapy or cyanoacrylate adhesive that does not meet the criteria described above to be **not medically necessary**.**

Accessory Saphenous Veins

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- Benefits are available in the member's contract/certificate, and
- Medical necessity criteria and guidelines are met.

Based on review of available data, the Company may consider treatment of accessory saphenous veins by surgery (ligation and stripping), endovenous radiofrequency or laser ablation, microfoam sclerotherapy or cyanoacrylate adhesive for symptomatic varicose veins/venous insufficiency to be **eligible for coverage**** when the following criteria have been met:

Patient Selection Criteria

Coverage eligibility will be met when all of the following criteria are met:

- Incompetence of the accessory saphenous vein is isolated, OR the great or small saphenous veins had been previously eliminated (at least 3 months); AND
- There is demonstrated accessory saphenous reflux; AND

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- There is documentation of one or more of the following indications:
 - Ulceration secondary to venous stasis; or
 - Recurrent superficial thrombophlebitis; or
 - Hemorrhage or recurrent bleeding episodes from a ruptured superficial varicosity; or
 - Persistent pain, swelling, itching, burning, or other symptoms are associated with saphenous reflux, AND the symptoms significantly interfere with activities of daily living, AND conservative management including compression therapy for at least three months has not improved the symptoms.

Concurrent treatment of the accessory saphenous veins along with the great or small saphenous veins may be considered **eligible for coverage**** when above criteria is met for each vein and there is documentation of anatomy showing that the accessory saphenous vein discharged directly into the common femoral vein.

When Services Are Considered Not Medically Necessary

Based on review on available data, the Company considers treatment of accessory saphenous veins by surgery or endovenous radiofrequency or laser ablation, or microfoam sclerotherapy, or cyanoacrylate adhesive that does not meet the criteria described above is **not medically necessary.****

Symptomatic Varicose Tributaries

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider the following treatments to be **eligible for coverage**** as a component of the treatment of symptomatic *varicose tributaries* when performed either at the same time or following prior treatment (surgical, radiofrequency or laser) of the saphenous veins (none of these techniques has been shown to be superior to another):

- Stab avulsion

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- Hook phlebectomy
- Sclerotherapy
- Transilluminated powered phlebectomy

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers treatment of symptomatic *varicose tributaries* when performed either at the same time or following prior treatment of saphenous veins using any other techniques than noted above to be **investigational**.*

Perforator Veins

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider surgical ligation (including subfascial endoscopic perforator surgery) or endovenous radiofrequency or laser ablation, or ultrasound-guided microfoam sclerotherapy of incompetent perforator veins as a treatment of leg ulcers associated with chronic venous insufficiency may be considered to be **eligible for coverage**** when the following conditions have been met:

- There is demonstrated perforator reflux; AND
- The superficial saphenous veins (great, small, or accessory saphenous and symptomatic varicose tributaries) have been previously eliminated; AND
- Ulcers have not resolved following combined superficial vein treatment and compression therapy for at least three months; AND
- The venous insufficiency is not secondary to deep venous thromboembolism.

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When Services Are Considered Not Medically Necessary

Based on review on available data, the Company considers ligation or ablation of incompetent perforator veins performed concurrently with superficial venous surgery is considered to be **not medically necessary**.**

Telangiectasia

Based on review on available data, the Company considers treatment of telangiectasia such as spider veins, angiomata, and hemangiomata cosmetic and is **not a covered benefit**.

Other

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers techniques for conditions not specifically listed above to be **investigational*** including, but not limited to:

- Sclerotherapy techniques, other than microfoam sclerotherapy, of greater, small, or accessory saphenous veins
- Sclerotherapy of perforator veins when criteria are not met
- Sclerotherapy of isolated tributary veins without prior or concurrent treatment of saphenous veins
- Stab avulsion, hook phlebectomy, or transilluminated powered phlebectomy of perforator, greater or small saphenous, or accessory saphenous veins
- Endovenous radiofrequency or laser ablation of tributary veins
- Endovenous cryoablation of any vein
- Mechanochemical ablation of any vein (e.g. MOCA, ClariVein™ Catheter)‡

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Policy Guidelines

The standard classification of venous disease is the CEAP (Clinical, Etiologic, Anatomic, Pathophysiologic) classification system. Table PG1 provides is the Clinical portion of the CEAP.

Table PG1. Clinical Portion of the CEAP Classification System

Class	Definition
C ₀	No visible or palpable signs of venous disease
C ₁	Telangiectasies or reticular veins
C ₂	Varicose veins
C _{2r}	Recurrent varicose veins
C ₃	Edema
C ₄	Changes in skin and subcutaneous tissue secondary to CVD
C _{4a}	Pigmentation and eczema
C _{4b}	Lipodermatosclerosis or atrophie blanche
C _{4c}	Corona phlebectatica
C ₅	Healed
C ₆	Active venous ulcer
C _{6r}	Recurrent active venous ulcer
S	Symptomatic
A	Asymptomatic

Adapted from: [https://www.jvsvenous.org/article/S2213-333X\(20\)30063-9/pdf](https://www.jvsvenous.org/article/S2213-333X(20)30063-9/pdf)
CVD, Chronic venous disease. Each clinical class subcharacterized by a subscript indicating the presence (symptomatic, s) or absence (asymptomatic, a) of symptoms attributable to venous disease. CEAP: Clinical, Etiologic, Anatomic, Pathophysiologic classification system.

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It should be noted that the bulk of the literature discussing the role of ultrasound guidance refers to sclerotherapy of the saphenous vein, as opposed to the varicose tributaries. When ultrasound guidance is used to guide sclerotherapy of the varicose tributaries, it would be considered either not medically necessary or incidental to the injection procedure.

Background/Overview

Venous Reflux/Venous Insufficiency

The venous system of the lower extremities consists of the superficial veins (this includes the great and small saphenous and accessory, or duplicate, veins that travel in parallel with the great and small saphenous veins), the deep system (popliteal and femoral veins), and perforator veins that cross through the fascia and connect the deep and superficial systems. One-way valves are present within all veins to direct the return of blood up the lower limb. Because the venous pressure in the deep system is generally greater than that of the superficial system, valve incompetence at any level may lead to backflow (venous reflux) with pooling of blood in superficial veins. Varicose veins with visible varicosities may be the only sign of venous reflux, although itching, heaviness, tension, and pain may also occur. Chronic venous insufficiency secondary to venous reflux can lead to thrombophlebitis, leg ulcerations, and hemorrhage. The CEAP classification of venous disease considers the clinical, etiologic, anatomic, and pathologic characteristics of venous insufficiency, ranging from class 0 (no visible sign of disease) to class 6 (active ulceration).

Treatment of Saphenous Veins and Tributaries

Saphenous veins include the great and small saphenous and accessory saphenous veins that travel in parallel with the great or small saphenous veins. Tributaries are veins that empty into a larger vein. Treatment of venous reflux has traditionally included the following:

- Identification by preoperative Doppler ultrasonography of the valvular incompetence
- Control of the most proximal point of reflux, traditionally by suture ligation of the incompetent saphenofemoral or saphenopopliteal junction
- Removal of the superficial vein from circulation, eg, by stripping of the great and/or small saphenous veins.
- Removal of varicose tributaries (at the time of the initial treatment or subsequently) by stab avulsion (phlebectomy) or injection sclerotherapy.

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Minimally invasive alternatives to ligation and stripping have been investigated. They include forms of sclerotherapy, cyanoacrylate adhesive, and thermal ablation using cryotherapy, high-frequency radio waves (200-300 kHz), or laser energy.

Thermal Ablation

Radiofrequency ablation is performed using a specially designed catheter inserted through a small incision in the distal medial thigh to within 1 to 2 cm of the saphenofemoral junction. The catheter is slowly withdrawn, closing the vein. Laser ablation is performed similarly; a laser fiber is introduced into the great saphenous vein under ultrasound guidance; the laser is activated and slowly removed, along the course of the saphenous vein. Cryoablation uses extreme cold. The objective of endovenous techniques is to injure the vessel, causing retraction and subsequent fibrotic occlusion of the vein. Technical developments since thermal ablation procedures were initially introduced include the use of perivenous tumescent anesthesia, which allows successful treatment of veins larger than 12 mm in diameter and helps to protect adjacent tissue from thermal damage during treatment of the small saphenous vein.

Sclerotherapy

The objective of sclerotherapy is to destroy the endothelium of the target vessel by injecting an irritant solution (either a detergent, osmotic solution, or chemical irritant), ultimately occluding the vessel. Treatment success depends on accurate injection of the vessel, an adequate injectate volume and concentration of sclerosant, and compression. Historically, larger veins and very tortuous veins were not considered good candidates for sclerotherapy due to technical limitations. Technical improvements in sclerotherapy have included the routine use of Duplex ultrasound to target refluxing vessels, luminal compression of the vein with anesthetics, and a foam/sclerosant injectate in place of liquid sclerosant. Foam sclerosants are produced by forcibly mixing a gas (eg, air or carbon dioxide) with a liquid sclerosant (eg, polidocanol or sodium tetradecyl sulfate). Physician-compounded foam is produced at the time of treatment. A commercially available microfoam sclerosant with a proprietary gas mix is available that is proposed to provide smaller and more consistent bubble size than what is produced with physician-compounded sclerosant foam.

Endovenous Mechanochemical Ablation

Endovenous mechanochemical ablation uses both sclerotherapy and mechanical damage to the lumen. Following ultrasound imaging, a disposable catheter with a motor drive is inserted into the distal end of the target vein and advanced to the saphenofemoral junction. As the catheter is

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pulled back, a wire rotates at 3500 rpm within the lumen of the vein, abrading the lumen. At the same time, a liquid sclerosant (sodium tetradecyl sulfate) is infused near the rotating wire. It is proposed that mechanical ablation allows for better efficacy of the sclerosant, and results in less pain and risk of nerve injury without the need for the tumescent anesthesia used with endovenous thermal ablation techniques (radiofrequency ablation, endovenous laser ablation).

Cyanoacrylate Adhesive

A cyanoacrylate adhesive is a clear, free-flowing liquid that polymerizes in the vessel via an anionic mechanism (ie, polymerizes into a solid material on contact with body fluids or tissue). The adhesive is gradually injected along the length of the vein in conjunction with ultrasound and manual compression. The acute coaptation halts blood flow through the vein until the implanted adhesive becomes fibrotically encapsulated and establishes chronic occlusion of the treated vein. Cyanoacrylate glue has been used as a surgical adhesive and sealant for a variety of indications, including gastrointestinal bleeding, embolization of brain arteriovenous malformations, and surgical incisions or other skin wounds.

Transilluminated Powered Phlebectomy

Transilluminated powered phlebectomy is an alternative to stab avulsion and hook phlebectomy. This procedure uses two instruments: an illuminator, which also provides irrigation, and a resector, which has an oscillating tip and suction pump. Following removal of the saphenous vein, the illuminator is introduced via a small incision in the skin and tumescence solution (anesthetic and epinephrine) is infiltrated along the course of varicosity. The resector is then inserted under the skin from the opposite direction, and the oscillating tip is placed directly beneath the illuminated veins to fragment and loosen the veins from the supporting tissue. Irrigation from the illuminator is used to clear the vein fragments and blood through aspiration and additional drainage holes. The illuminator and resector tips may then be repositioned, thereby reducing the number of incisions needed when compared with stab avulsion or hook phlebectomy. It has been proposed that transilluminated powered phlebectomy might decrease surgical time, decrease complications such as bruising and lead to a faster recovery than established procedures.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

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In 2015, the VenaSeal Closure System (Sapheon, part of Medtronic) was approved by the U.S. FDA through the premarket approval (P140018) process for the permanent closure of clinically significant venous reflux through endovascular embolization with coaptation. The VenaSeal Closure System seals the vein using a cyanoacrylate adhesive agent. FDA product code: PJQ.

In 2013, Varithena(R)(formerly Varisolve), a sclerosant microfoam made with a proprietary gas mix, was approved by the FDA under a new drug application (205-098) for the treatment of incompetent great saphenous veins, accessory saphenous veins, and visible varicosities of the great saphenous vein system above and below the knee.

The following devices were cleared for marketing by the FDA through the 501(k) process for endovenous treatment of superficial vein reflux:

In 1999, the VNUS Closure(R) System, a radiofrequency device, was cleared by the FDA through the 510(k) process for "endovascular coagulation of blood vessels in patients with superficial vein reflux." In 2005, the VNUS RFS(R) and RFS*Flex*(R) devices were cleared by the FDA for "use in vessel and tissue coagulation including treatment of incompetent (ie, refluxing) perforator and tributary veins." In 2008, the modified VNUS ClosureFast(R) Intravascular Catheter was cleared by the FDA through the 510(k) process. FDA product code: GEI.

In 2002, the Diomed 810 nm surgical laser and EVLT(R) (endovenous laser therapy) procedure kit were cleared by the FDA through the 510(k) process ".....for use in the endovascular coagulation of the great saphenous vein of the thigh in patients with superficial vein reflux." FDA product code: GEX.

In 2005, a modified Erbe Erbokryo cryosurgical unit (Erbe USA) was approved by the FDA for marketing. A variety of clinical indications are listed, including cryostripping of varicose veins of the lower limbs. FDA product code: GEH.

In 2003, the Trivex system (InaVein), a device for transilluminated powered phlebectomy, was cleared by the FDA through the 510(k) process for "ambulatory phlebectomy procedures for the resection and ablation of varicose veins." FDA product code: DNQ.

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In 2008, the ClariVein Infusion Catheter (Vascular Insights) was cleared by the FDA through the 510(k) process (K071468) for mechanochemical ablation. The FDA determined that this device was substantially equivalent to the Trellis Infusion System (K013635) and the Slip-Cath Infusion Catheter (K882796). The system includes an infusion catheter, motor drive, stopcock, and syringe, and is intended for the infusion of physician-specified agents in the peripheral vasculature. FDA product code: KRA

Rationale/Source

A variety of treatment modalities are available to treat varicose veins/venous insufficiency, including surgery, thermal ablation, sclerotherapy, mechanochemical ablation (MOCA), cyanoacrylate adhesive (CAC), and cryotherapy. The application of each modality is influenced by the severity of the symptoms, type of vein, source of venous reflux, and the use of other (prior or concurrent) treatment.

Saphenous Veins

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive endovenous thermal ablation (radiofrequency or laser), the evidence includes RCTs and systematic reviews of controlled trials. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. There are a number of large RCTs and systematic reviews of RCTs assessing endovenous thermal ablation of the saphenous veins. Comparison with the standard of ligation and stripping at 2- to 5-year follow-up has supported the use of both endovenous laser ablation and RFA. Evidence has suggested that ligation and stripping lead to more neovascularization, while thermal ablation leads to more recanalization, resulting in similar clinical outcomes for endovenous thermal ablation and surgery. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive microfoam sclerotherapy, the evidence includes RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and TRM. For physician-compounded sclerotherapy, there is high variability in success rates and some reports of serious adverse events. By comparison, rates of occlusion with the microfoam sclerotherapy (polidocanol 1%) approved by the FDA are similar to those reported for endovenous laser ablation or stripping. Results of a

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Louisiana

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Policy # 00034

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noninferiority trial of physician-compounded sclerotherapy have indicated that once occluded, recurrence rates at two years are similar to those of ligation and stripping. Together, this evidence indicates that the more consistent occlusion with the microfoam sclerotherapy preparation will lead to recurrence rates similar to ligation and stripping in the longer term. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

Based on the available evidence, clinical input obtained in 2015, and clinical practice guidelines, the use of endovenous RFA, endovenous laser ablation, and microfoam sclerotherapy are considered to improve outcomes when used in the saphenous veins. For treatment of saphenous tributaries at the same time or following treatment of the saphenous vein, stab avulsion, hook phlebectomy, sclerotherapy, or transilluminated powered phlebectomy improve outcomes.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive MOCA, the evidence includes 4 RCTs with 6 month to 2 year results that compared MOCA to thermal ablation, a prospective cohort with follow-up out to 5 years, and retrospective case series. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and TRM. MOCA is a combination of liquid sclerotherapy with mechanical abrasion. A potential advantage of this procedure compared with thermal ablation is that MOCA does not require tumescent anesthesia and may result in less pain during the procedure. Results to date have been mixed regarding a reduction in intraprocedural pain compared to thermal ablation procedures. Occlusion rates at 6 month to 2 year from RCTs indicate lower anatomic success rates compared to thermal ablation, but a difference in clinical outcomes at these early time points has not been observed. Experience with other endoluminal ablation procedures suggests that lower anatomic success in the short term is associated with recanalization and clinical recurrence between 2 to 5 years. The possibility of later clinical recurrence is supported by a prospective cohort study with 5-year follow-up following treatment with MOCA. However, there have been improvements in technique since the cohort study was begun, and clinical progression is frequently observed with venous disease. Because of these limitations of the single arm studies, longer follow-up in the more recently conducted RCTs is needed to establish the efficacy and durability of this procedure compared with the criterion standard of thermal ablation. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive CAC, the evidence includes two RCTs and a prospective cohort. Relevant outcomes are

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symptoms, change in disease status, morbid events, quality of life, and TRM. Evidence includes a multicenter noninferiority trial with follow-up through 36 months, an RCT with follow-up through 24 months, and a prospective cohort with 30-month follow-up. The short-term efficacy of VenaSeal CAC has been shown to be noninferior to RFA at up to 36 months. At 24 and 36 months the study had greater than 20% loss to follow-up, but loss to follow-up was similar in the 2 groups at the long-term follow-up and is not expected to influence the comparative results. A second RCT (n=525) with the same active CAC ingredient (N-butyl cyanoacrylate) that is currently available outside of the U.S. found no significant differences in vein closure between CAC and thermal ablation controls at 24-month follow-up. The CAC procedure and return to work were shorter and pain scores were lower compared to thermal ablation, although the subjective pain scores may have been influenced by differing expectations in this study. A prospective cohort reported high closure rates at 30 months. Overall, results indicate that outcomes from CAC are at least as good as thermal ablation techniques, the current standard of care. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have varicose veins/venous insufficiency and saphenous vein reflux who receive cryoablation, the evidence includes RCTs and multicenter series. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and TRM. Results from a recent RCT of cryoablation have indicated that this therapy is inferior to conventional stripping. Studies showing a benefit on health outcomes are needed. The evidence is insufficient to determine the effects of the technology on health outcomes.

Varicose Tributary Veins

For individuals who have varicose tributary veins who receive ablation (stab avulsion, sclerotherapy, or phlebectomy) of tributary veins, the evidence includes RCTs and systematic reviews of RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The literature has shown that sclerotherapy is effective for treating tributary veins following occlusion of the saphenofemoral or saphenopopliteal junction and saphenous veins. No studies have been identified comparing RFA or laser ablation of tributary veins with standard procedures (microphlebectomy and/or sclerotherapy). TIPP is effective at removing varicosities; outcomes are comparable to available alternatives such as stab avulsion and hook phlebectomy. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

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Perforator Veins

For individuals who have perforator vein reflux who receive ablation (eg, subfascial endoscopic perforator surgery) of perforator veins, the evidence includes RCTs and systematic reviews of RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The literature has indicated that the routine ligation or ablation of incompetent perforator veins is not necessary for the treatment of varicose veins/venous insufficiency at the time of superficial vein procedures. However, when combined superficial vein procedures and compression therapy have failed to improve symptoms (ie, ulcers), treatment of perforator vein reflux may be as beneficial as an alternative (eg, deep vein valve replacement). Comparative studies are needed to determine the most effective method of ligating or ablating incompetent perforator veins. Subfascial endoscopic perforator surgery is possibly as effective as the Linton procedure with a reduction in adverse events. Although only one case series has been identified showing an improvement in health outcomes, endovenous ablation with specialized laser or radiofrequency probes has been shown to effectively ablate incompetent perforator veins with a potential decrease in morbidity compared with surgical interventions. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

Supplemental Information

Clinical Input From Physician Specialty Societies and Academic Medical Centers

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

In response to requests, input was received from 4 physician specialty societies while this policy was under review in 2015. There was no agreement on the need to treat varicose tributaries to improve functional outcomes in the absence of saphenous vein disease. Input was also mixed on the use of mechanochemical ablation and cyanoacrylate adhesive.

Practice Guidelines and Position Statements

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

Society for Vascular Surgery and American Venous Forum

The Society for Vascular Surgery and the American Venous Forum (2011) published joint clinical practice guidelines. Table 1 provides the recommendations.

Table 1. Guidelines on Management of Varicose Veins and Associated Chronic Venous Diseases

Recommendation	Grade ^a	SOR	QOE
<i>Compression therapy for venous ulcerations and varicose veins</i>			
Compression therapy is recommended as the primary treatment to aid healing of venous ulceration	1B	Strong	Moderate
To decrease the recurrence of venous ulcers, ablation of the incompetent superficial veins in addition to compression therapy is recommended	1A	Strong	High
Use of compression therapy for patients with symptomatic varicose veins is recommended	2C	Weak	Low
Compression therapy as the primary treatment if the patient is a candidate for saphenous vein ablation is not recommended	1B	Strong	Moderate
<i>Treatment of the incompetent great saphenous vein</i>			
Endovenous thermal ablation (radiofrequency or laser) is recommended over chemical ablation with foam or high ligation and stripping due to reduced convalescence and less pain and morbidity. Cryostripping is a technique that is new in the United States, and it has not been fully evaluated.	1B	Strong	Moderate
<i>Varicose tributaries</i>			
Phlebectomy or sclerotherapy are recommended to treat varicose tributaries	1B	Strong	Moderate

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

Recommendation	Grade ^a	SOR	QOE
Transilluminated powered phlebectomy using lower oscillation speeds and extended tumescence is an alternative to traditional phlebectomy	2C	Weak	Low
<i>Perforating vein incompetence</i>			
Selective treatment of perforating vein incompetence in patients with simple varicose veins is not recommended	1B	Strong	Moderate
Treatment of pathologic perforating veins (outward flow of ≥ 500 ms duration, with a diameter of ≥ 3.5 mm) located underneath healed or active ulcers (CEAP class C5-C6) is recommended	2B	Weak	Moderate

QOE: quality of evidence; SOR: strength of recommendation.

^a Grading: strong = 1 or weak = 2, based on a level of evidence that is either high quality = A, moderate quality = B, or low quality = C.

Society of Interventional Radiography et al.

In 2010, the Society of Interventional Radiography, along with Cardiovascular Interventional Radiological Society of Europe, American College of Phlebology, and Canadian Interventional Radiology Association, published consensus quality improvement guidelines for the treatment of lower extremity superficial venous insufficiency using endovenous thermal ablation.

In a joint statement, American Venous Forum and Society of Interventional Radiography (2007) recommended reporting standards for endovenous ablation for the treatment of venous insufficiency. They recommended that reporting in clinical studies should include the symptoms of venous disease, history of the disease and prior treatment, the presence of major comorbidities, and any exclusion criteria. It was noted that potential candidates for endovenous ablation might include patients with reflux in an incompetent great saphenous vein or smaller saphenous vein or a major tributary branch of the great or smaller saphenous veins such as the anterior thigh circumflex vein, posterior thigh circumflex vein, or anterior accessory great saphenous vein. The presence of reflux in these veins is important to document using duplex ultrasound imaging, and the ultrasound criteria used to define reflux should be indicated. It was also stated that, in current practice, most vascular laboratories consider the presence of venous flow reversal for greater than 0.5 to 1.0 second with

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

proximal compression, Valsalva maneuver, or distal compression and release to represent pathologic reflux.

American Vein and Lymphatic Society

In 2015, the American Vein and Lymphatic Society (AVL, previously named the American College of Phlebology) published guidelines on the treatment of superficial vein disease.

AVL gave a Grade 1 recommendation based on high quality evidence that compression is an effective method for the management of symptoms, but when patients have a correctable source of reflux definitive treatment should be offered unless contraindicated. AVL recommends against a requirement for compression therapy when a definitive treatment is available. AVL gave a strong recommendation based on moderate quality evidence that endovenous thermal ablation is the preferred treatment for saphenous and accessory saphenous vein incompetence, and gave a weak recommendation based on moderate quality evidence that mechanochemical ablation may also be used to treat venous reflux.

In 2017, AVL published guidelines on the treatment of refluxing accessory saphenous veins. The College gave a Grade 1 recommendation based on level C evidence that patients with symptomatic incompetence of the accessory saphenous veins be treated with endovenous thermal ablation or sclerotherapy to reduce symptomatology. The guidelines noted that although accessory saphenous veins may drain into the great saphenous vein before it drains into the common femoral vein, they can also empty directly into the common femoral vein.

National Institute for Health and Care Excellence

In 2013, the U.K.'s National Institute for Health and Care Excellence (NICE) updated its guidance on ultrasound-guided foam sclerotherapy for varicose veins. NICE stated that:

"1.1 Current evidence on the efficacy of ultrasound-guided foam sclerotherapy for varicose veins is adequate. The evidence on safety is adequate, and provided that patients are warned of the small but significant risks of foam embolization (see section 1.2), this procedure may be used with normal arrangements for clinical governance, consent and audit.

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Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

1.2 During the consent process, clinicians should inform patients that there are reports of temporary chest tightness, dry cough, headaches and visual disturbance, and rare but significant complications including myocardial infarction, seizures, transient ischaemic attacks and stroke."

NICE (2016) revised its guidance on endovenous mechanochemical ablation, concluding that "Current evidence on the safety and efficacy of endovenous mechanochemical ablation for varicose veins appears adequate to support the use of this procedure...."

NICE (2013) published guidance on the diagnosis and management of varicose veins in the leg. The NICE (2015) published a technology assessment on the clinical effectiveness and cost-effectiveness of foam sclerotherapy, endovenous laser ablation, and surgery for varicose veins. Five-year trial results are currently being evaluated.

U.S. Preventive Services Task Force Recommendations

Not applicable.

Medicare National Coverage

There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

Ongoing and Unpublished Clinical Trials

Some currently unpublished trials that might influence this review are listed in Table 2.

Table 2. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
<i>Ongoing</i>			
NCT03392753	Randomised Controlled Trial of Mechanochemical Ablation Versus Cyanoacrylate Adhesive for the Treatment of Varicose Veins	180	Dec 2020
NCT03722134	Mechanochemical Ablation vs Thermal Ablation in Patients With Great Saphenous Vein Insufficiency	132	Dec 2020

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Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

NTR4613 ^a	Mechanochemical endovenous ablation versus radiofrequency ablation in the treatment of primary small saphenous vein insufficiency (MESSI trial)	160	Apr 2020
NCT01936168	Mechanochemical endovenous ablation versus radiofrequency ablation in the treatment of primary great saphenous vein incompetence (MARADONA)	213	Dec 2020
NCT03835559	Randomized Controlled Trial Comparing the Clinical Outcomes After Cyanoacrylate Closure and Surgical Stripping for Incompetent Saphenous Veins	146	Feb 2021
NCT02627846	A Randomised Clinical Trial Comparing Endovenous Laser Ablation and Mechanochemical Ablation (ClariVein) in the Management of Superficial Venous Insufficiency (LAMA)	140	Aug 2025

NCT: national clinical trial. NTR: Netherlands Trial Registry.

^a Denotes industry-sponsored or cosponsored trial.

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Louisiana

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Policy # 00034

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

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Current Effective Date: 10/12/2020

08/15/2002 Medical Policy Committee review
08/26/2002 Managed Care Advisory Council approval
10/05/2004 Medical Director review
11/16/2004 Medical Policy Committee review. Format revision. Clinical criteria added.
11/29/2004 Managed Care Advisory Council approval
10/05/2005 Medical Director review
10/18/2005 Medical Policy Committee review. Format revision. No substance change to policy.
10/27/2005 Quality Care Advisory Council approval
07/07/2006 Format revision including addition of FDA and or other governmental regulatory approval and rationale/source. Coverage eligibility unchanged.
11/01/2006 Medical Director review
11/15/2006 Medical Policy Committee approval. Patient selection criteria changed to include all saphenous varicose veins as eligible for coverage with criteria.
06/13/2007 Medical Director review
06/20/2007 Medical Policy Committee approval. Policy revised to include small saphenous and great saphenous vein greater than 12mm. Rationale/Source updated.
06/04/2008 Medical Director review
06/18/2008 Medical Policy Committee approval. No change to coverage eligibility.
06/04/2009 Medical Director review
06/17/2009 Medical Policy Committee approval. No change to coverage eligibility.
06/03/2010 Medical Policy Committee review
06/16/2010 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
06/02/2011 Medical Policy Committee review
06/15/2011 Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
06/14/2012 Medical Policy Committee review

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Louisiana

Treatment of Varicose Veins/Venous Insufficiency

Policy # 00034

Original Effective Date: 08/26/2002

Current Effective Date: 10/12/2020

- 06/20/2012 Medical Policy Implementation Committee approval. Policy extensively rewritten. Title changed. Added “echosclerotherapy, also known as deep ultrasound-guided sclerotherapy (DUGS), usually with a catheter infusion of a foam sclerosant, and other protocols for sclerotherapy, including the COMPASS protocol” to list of investigational indications.
- 06/04/2013 The “not medically necessary” statement for treatment of greater or lesser saphenous veins clarified by removal of the term “cosmetic”.
- 06/06/2013 Medical Policy Committee review
- 06/25/2013 Medical Policy Implementation Committee approval. Mechanochemical ablation of any vein added as investigational. “The Company considers treatment of telangiectasia such as spider veins, angiomas, and hemangiomas cosmetic and is not a covered benefit” was changed from not medically necessary.
- 06/05/2014 Medical Policy Committee review
- 06/18/2014 Medical Policy Implementation Committee approval. No change to coverage.
- 03/05/2015 Medical Policy Committee review
- 03/20/2015 Medical Policy Implementation Committee approval. Microfoam sclerotherapy considered medically necessary. Added “or microfoam sclerotherapy” to the not medically necessary policy statement under accessory saphenous veins.
- 08/03/2015 Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section removed.
- 01/07/2016 Medical Policy Committee review
- 01/22/2016 Medical Policy Implementation Committee approval. The requirement of failure of compression therapy was removed from the policy statements on ulceration secondary to venous stasis and recurrent superficial thrombophlebitis; terminology was changed from greater and lesser to great and small saphenous veins. Cyanoacrylate adhesive of any vein added to INV statement. CEAP clinical classification info added.
- 01/01/2017 Coding update: Removal of ICD-9 Diagnosis Codes and CPT coding update
- 01/05/2017 Medical Policy Committee review
- 01/18/2017 Medical Policy Implementation Committee approval. Added coverage for ultrasound-guided microfoam sclerotherapy.
- 01/04/2018 Medical Policy Committee review
- 01/17/2018 Medical Policy Implementation Committee approval. Sclerotherapy of perforator veins when criteria are not met added as investigational.

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01/10/2019 Medical Policy Committee review
01/23/2019 Medical Policy Implementation Committee approval. No change to coverage.
09/05/2019 Medical Policy Committee review
09/11/2019 Medical Policy Implementation Committee approval. Cyanoacrylate adhesive may be considered medically necessary. A statement was added on concurrent treatment of the accessory saphenous veins.
09/03/2020 Medical Policy Committee review
09/09/2020 Medical Policy Implementation Committee approval. No change to coverage.
Next Scheduled Review Date: 09/2021

Coding

The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2019 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

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Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	0524T, 36465, 36466, 36468, 36470, 36471, 36473, 36474, 36475, 36476, 36478, 36479, 36482, 36483, 37500, 37700, 37718, 37722, 37735, 37760, 37761, 37765, 37766, 37780, 37785, 37799, 49185
HCPCS	S2202
ICD-10 Diagnosis	I83.001-I83.029, I83.10-I83.12, I83.201-I83.229, I83.811-I83.819, I83.891-I83.899, I83.90-I83.93, I87.2

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

- A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
- B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
 - 1. Consultation with the Blue Cross and Blue Shield Association technology assessment program (TEC) or other nonaffiliated technology evaluation center(s);
 - 2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
 - 3. Reference to federal regulations.

**Medically Necessary (or “Medical Necessity”) - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

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- A. In accordance with nationally accepted standards of medical practice;
- B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and
- C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, “nationally accepted standards of medical practice” means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

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NOTICE: If the Patient’s health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

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