LOUISIANA BLUE

Transcatheter Uterine Artery Embolization

Policy # 00130
Original Effective Date: 03/25/2002
Current Effective Date: 03/10/2025

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.

Note: Magnetic Resonance –Guided Focused Ultrasound is addressed separately in medical policy 00180.

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.A*

Based on review of available data, the Company may consider transcatheter uterine artery embolization in certain situations as a technique to control acute pelvic hemorrhagic conditions from something other than uterine fibroids, such as obstetric hemorrhage or ectopic pregnancy to be **eligible for coverage.****

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 transcatheter uterine artery embolization as a treatment of uterine fibroids to be **eligible for coverage.****

Patient Selection Criteria

Coverage eligibility for transcatheter uterine artery embolization as a treatment of uterine fibroids will be considered when any of the following criteria are met:

- Excessive uterine bleeding; **OR**
- Pelvic discomfort caused by uterine fibroids (for example, acute severe pain, chronic lower abdominal pain, low back pressure, or bladder pressure with urinary frequency not due to urinary tract infection).

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When Services Are Considered Investigational

Based on review of available data, the Company considers transcatheter uterine artery embolization in all other situations and when criteria above have not been met to be **investigational.***

Based on review of available data, the Company considers repeat transcatheter embolization of uterine arteries to treat persistent symptoms of uterine fibroids after an initial uterine artery embolization to be **investigational.***

Background/Overview

This document addresses the use of transcatheter uterine artery embolization (UAE) as a treatment for fibroid tumors. UAE is a pelvic angiographic procedure used to decrease the symptoms of heavy bleeding and pelvic pain associated with fibroid tumors. Using hemostatic particles, selected vasculature providing the blood supply to the fibroids are occluded. When the blood supply is occluded, the fibroids decrease in size, thereby reducing the symptoms.

Transcatheter UAE has also been used for treatment of other acute pelvic hemorrhagic conditions such as uterine hemorrhage and ectopic pregnancy. Transcatheter uterine artery embolization is a technique performed by an interventional radiologist.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

In April 2000, Embosphere®‡ Microspheres (Merit Medical, formerly BioSphere Medical) was cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process for hypervascularized tumors and AVMs.

In 2002,this product was cleared for marketing specifically for use in uterine fibroid embolization. Since then, several otherdevices have been cleared for marketing and a sampling of those are listed herein. In 2003, Contour®‡ Emboli PVA (Boston Scientific) was cleared for marketing by the FDA through the 510(k) process for the embolization of peripheralhypervascular tumors and peripheral AVMs. In March 2004, the Contour SE™‡ (Boston Scientific) was cleared formarketing by the FDA through the 510(k) process for the treatment of uterine fibroids. In 2008, Polyvinyl Alcohol FoamEmbolization Particles (Cook Inc.) was cleared for marketing by the FDA through the 510(k) process for use in uterinefibroid embolization. In 2016, Bead Block™‡ microspheres (Biocompatibles UK) were cleared for marketing by FDA forembolization of uterine fibroids and AVMs. In 2020, Hydropearl®‡ Microspheres (MicroVention, Inc.) was cleared formarketing by FDA for the embolization of arteriovenous malformations and hypervascular tumors, including uterinefibroids. FDA product code: NAJ.

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Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. Food and Drug Administration approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, technology evaluation centers, reference to regulations, other plan medical policies, and accredited national guidelines.

Transcatheter UAE deprives blood flow to uterine fibroids by embolizing the blood supply to the fibroids using a catheter placed into an artery (usually the femoral or radial artery) which is directed to the vessels that supply the fibroids. Once localized, the blood supply is blocked (a process called embolization) by injecting one of several substances which cause arterial occlusion, resulting in atrophy and death of the target tissue (fibroid) over a period of weeks or months. UAE has been reported to have a success rate of 81-100% (American College of Radiology [ACR], 2017). Indications for UAE include bulk symptoms and heavy menstrual bleeding. Side effects of the procedure are pelvic pain, vaginal expulsion of submucosal fibroids, and postembolization syndrome, a flu-like syndrome that presents with pain, nausea, fevers, and leukocytosis. UAE has been shown to cause persistent decreases in pain, heavy menstrual bleeding, and an average decrease in uterine fibroid size of >50% at 5 years (ACR, 2023).

UAE for Uterine Fibroids

Randomized controlled trials and meta-analyses provided early outcomes comparing the outcomes of UAE to surgical intervention and characterizing the complications following UAE (Bruijn, 2016; Martin, 2013; Moss, 2011; Torr, 2012). Overall, no significant differences in quality of life (QOL) were observed between UAE and surgery, though reintervention was significantly more likely following UAE. The most frequent adverse effects of UAE included pain, fever, amenorrhea, passage of fibrous tissue and post-embolization syndrome.

The National Institute for Health and Care Excellence (NICE) published interventional procedure guidance for uterine artery embolization for fibroids (2010). The recommendations include the following:

1.1 Current evidence on UAE for fibroids shows that the procedure is efficacious for symptom relief in the short and medium term for a substantial proportion of patients. There are no major safety concerns. Therefore this procedure may be used provided that normal arrangements are in place for clinical governance and audit.

1.2 During the consent process patients should be informed, in particular, that symptom relief may not be achieved in some women, that symptoms may return and that further procedures may therefore be required. Patients contemplating pregnancy should be informed that the effects of the procedure on fertility and on pregnancy are uncertain.

1.3 Patient selection should be carried out by a multidisciplinary team, including a gynecologist and an interventional radiologist.

1.4 NICE encourages further research into the effects of UAE compared with other procedures to treat fibroids, particularly for women wishing to maintain or improve their fertility.

In 2017, the Agency for Healthcare Research and Quality (AHRQ) published a comparative effectiveness review entitled "Management of uterine fibroids." The purpose of the review was to evaluate treatment effectiveness and the risk of leiomyosarcoma in individuals with fibroids. In regard to UAE, AHRQ concluded:

There was high strength of evidence that UAE is effective for reducing fibroid volume. The strength of evidence supporting improvements in bleeding and quality of life is moderate for UAE. Five-year follow-up data were available from two large, good quality trials in which well over half the women who received an embolization did not need a subsequent intervention (including hysterectomy). The effect of UAE on reproductive outcomes is not well studied and evidence is insufficient to guide care or determine safety.

Laughlin-Tommaso and colleagues (2019) reported on The Fibroid Interventions: Reducing Symptoms Today and Tomorrow (FIRSTT) randomized controlled trial. The trial's primary aim was to compare treatment effectiveness between UAE versus magnetic resonance imaging (MRI)-guided ultrasound surgery, and the secondary aim was to compare QOL, pain, fibroid symptom scores, and ovarian function between the two treatments for uterine leiomyomas. A total of 83 individuals were treated with 43 individuals in the MRI-guided ultrasound surgery group and 40 individuals in the UAE group. Of those in the MRI-guided ultrasound group, 16 (37%) individuals accepted enrollment in the study, but declined randomization, and of those in the UAE group, 18 (45%) individuals accepted enrollment in the study, but declined randomization. The results showed the rate of secondary procedure was higher in the MRI-guided ultrasound surgery group (30%) than the UAE group (13%) (hazard ratio, 2.81; 95% Confidence Interval [CI], 1.01-7.79). Secondary procedures included hysterectomy, myomectomy, and UAE. Ovarian function was evaluated by measuring serum anti-Müllerian hormone (AMH). At 24 months, the median interquartile range absolute change in AMH was significantly larger in the UAE group (-0.6 units [-1.2-0.4]) than the MRI-guided ultrasound surgery group (-0.2 units [-0.4-0.4]; p=0.03). Overall, QOL, pain, and fibroid symptom scores improved in both groups with a higher improvement in the UAE group; however, there was incomplete follow-up in both groups with only 44% follow-up in the MRI-guided ultrasound surgery group and 55% follow-up in the UAE group. This study shows positive results for UAE, however, limitations noted are the small sample size, partial randomization, and incomplete follow-up assessments of QOL, pain, and fibroid symptom scores.

In 2020, Manyonda and colleagues published the results of a multicenter, randomized, open-label trial which enrolled 254 premenopausal women, 18 or older, to evaluate myomectomy (n=105)

compared to UAE (n=98), in those with symptomatic uterine fibroids who wanted to avoid hysterectomy. The study's primary outcome of interest was fibroid-related QOL. Secondary measures included menstrual blood loss estimation by self-report, occurrence of pregnancy and pregnancy outcomes, and overall satisfaction with the procedure. A total of 206 individuals (81%) were available for evaluation of the primary outcome. At 2 years, the mean score on the health-related QOL domain of the UFS-QOL questionnaire was 84.6 (standard deviation [SD] 21.5) in the myomectomy group and 80.0 (SD 22.0) in the UAE group (p=0.01). Perioperative and postoperative complications occurred in 29% of the individuals in the myomectomy group and in 24% of the individuals in the UAE group (relative risk, 1.2; 95% CI, 0.8 to 1.9; p=0.40). At 2-year follow-up, additional fibroid-related procedures were performed in 16% of the UAE group and 7% of the myomectomy group. The median length of hospital stay was 2 days for the UAE group and 4 days for the myomectomy group. There were too few pregnancies during the trial to compare differences, if any, in fertility-sparing outcomes following the procedures. With respect to the study's primary outcome, authors conclude that, among individuals with symptomatic uterine fibroids, treatment with myomectomy resulted in better fibroid-related QOL at 2 years compared to treatment with UAE. Both UAE and myomectomy remain reasonable options for individuals seeking uterine-sparing treatment of symptomatic uterine fibroids.

In 2023 the ACR revised the Appropriateness Criteria for Management of Uterine Fibroids. The criteria include the following:

- Reproductive age patient with uterine fibroids, symptomatic with heavy uterine bleeding or bulk symptoms (for example, pressure, pain, fullness, bladder, or bowel symptoms), and a desire to preserve fertility. Initial therapy, Usually appropriate
- Reproductive age patient with uterine fibroids and concurrent adenomyosis, symptomatic with heavy uterine bleeding or bulk symptoms (for example, pressure, pain, fullness, bladder, or bowel symptoms), and no desire for future fertility. Initial therapy, Usually appropriate.
- Reproductive age patient with pedunculated submucosal uterine fibroids, symptomatic with heavy uterine bleeding. Initial therapy, May Be Appropriate
- Postmenopausal patient with uterine fibroids, symptomatic with heavy uterine bleeding or bulk symptoms (for example, pressure, pain, fullness, bladder, or bowel symptoms). Negative endometrial biopsy. Next step, May Be Appropriate
- Reproductive age patient with uterine fibroids desiring pregnancy and experiencing reproductive dysfunction. Initial therapy, May Be Appropriate

Another Cochrane review by Gupta and colleagues (2024) compared the benefits and risk of UAE versus other medical or surgical interventions for symptomatic uterine fibroids, 7 RCTs with 793 individuals were included in the review. Three trials compared UAE with abdominal hysterectomy, 2 compared UAE with myomectomy, and 2 compared UAE with either hysterectomies (n=53) or myomectomies (n= 62). The primary outcomes measured were participant satisfaction and live birth rate. The participant satisfaction rates were up to 41% lower or up to 48% higher with UAE

compared to surgery within 2 years of the procedure, findings on satisfaction rates were also inconclusive at 5 years. The UAE group had shorter hospital stays and more rapid recoveries. The evidence on major complications was inconclusive and inconsistent from either intervention, however, the risk of minor complications was increased after UAE, there was also a higher likelihood of needing another surgery after UAE at 2 and 5 year follow-up. There was very low quality evidence to suggest that fertility outcomes may be better after myomectomy than after UAE, but this evidence was based on a small, selected subgroup and should be regarded cautiously. The authors concluded that UAE is a safe option with an earlier initial recovery but it does carry an elevated risk of minor complications and the need for subsequent surgeries later on. The quality of the evidence varied from very low for live birth, to moderate for satisfaction ratings and for most safety outcomes. The main study limitations were failure to clearly report methods, and lack of blinding for subjective outcomes.

Based on evaluation of the existing peer-reviewed medical literature, there is adequate evidence to support the use of UAE for the treatment of acute pelvic and obstetric hemorrhage, ectopic pregnancy, and symptomatic uterine fibroids (including pedunculated fibroids [Katsumori, 2005; Kim, 2018; Smeets, 2009; Zhang, 2022]). For the treatment of pelvic and obstetric hemorrhage, UAE has been shown to be a safe and effective method to control bleeding when compared with alternative methods, such as surgical intervention. For ectopic pregnancy, it has been illustrated that UAE is a safe and effective adjunct to methotrexate treatment, decreasing the need for surgical interventions following drug-only treatment methods that are often unsuccessful.

UAE for non-ectopic pregnancies

A 2020 Cochrane review by Long and colleagues evaluated the clinical effectiveness and safety of surgery, medical treatment, and expectant management of non-tubal ectopic pregnancy on fertility outcomes and complications. The review included 5 RCTs (n=303) all reporting on Caesarean scar pregnancy. Two of the studies compared UAE or uterine arterial chemoembolization (UACE) plus methotrexate versus systemic methotrexate and subsequent dilation and suction curettage; 1 compared UACE plus methotrexate versus ultrasonography-guided local methotrexate injection; and 2 compared suction curettage under hysteroscopy versus suction curettage under ultrasonography after UAE/UACE. The quality of evidence ranged from moderate to very low. Limitations were small sample sizes, wide confidence intervals for most analyses, multiple comparisons with a small number of trials, and insufficient data to assess heterogeneity. Therefore the authors concluded that it is uncertain whether there is a difference in success rates, complications, or adverse events between UAE/UACE and administration of systemic methotrexate before suction curettage (low-quality evidence). However, blood loss was lower if suction curettage was completed after UAE/UACE than after administration of systemic methotrexate alone (moderate-quality evidence). There are no studies of non-tubal ectopic pregnancy other than CSP and RCTs for these types of pregnancy are unlikely.

Repeat UAE for Uterine Fibroids
Due to a paucity of data, the current literature evaluating clinical outcomes following repeat UAE for treatment of persistent symptoms of uterine fibroids after an initial UAE is insufficient to establish efficacy (McLucas, 2009; Yousefi, 2006).

Contraindications to UAE
Andrews and colleagues (2004) cite contraindications for uterine artery embolization to include pregnancy, infection, malignancy, coagulopathy and prior pelvic irradiation. The Society of Obstetricians and Gynecologists of Canada stated in a guideline entitled "The management of uterine leiomyomas" the following recommendations regarding UAE:

Uterine artery occlusion by embolization or surgical methods may be offered to selected women with symptomatic uterine fibroids who wish to preserve their uterus. Women choosing uterine artery occlusion for the treatment of fibroids should be counselled regarding possible risks, including the likelihood that fecundity and pregnancy may be impacted.

An increase in uterine size due to fibroid volume is a consideration prior to UAE. A study by Choi (2013) evaluated the safety, effectiveness, and rate of complications of UAE in individuals with large uterine fibroids. A total of 323 individuals without adenomyosis underwent UAE for symptomatic uterine fibroids. The individuals were divided into 2 groups: group 1 (treatment group) included 63 individuals with a large tumor of at least 10 cm in size or a uterine volume of at least 700 cm and group 2 (260 women) was the control group. Group 1 demonstrated a 46.5% tumor volume reduction compared with 52% in group 2. Group 1 had a 40.7% uterine volume reduction compared with 36.3% in group 2. There were no reported significant differences in satisfaction or the presence of procedure-related complications.

Other therapies for symptomatic uterine fibroids include hysterectomy, myomectomy, hormonal therapy with gonadotropin-releasing hormone (GnRH) analogues and luteinizing-hormone releasing hormone (LHRH) analogues, and endurance until menopause when fibroids often regress.

UAE for Adenomyosis
The current published literature does not support the use of UAE for adenomyosis. A review by Popovic (2011) evaluated 15 studies in which 511 individuals received UAE for adenomyosis. Although 387 of the 511 individuals reported symptomatic relief, the authors of the review concluded that the evidence is insufficient to establish UAE as a potential first-line treatment for adenomyosis. Larger, randomized trials with sufficient follow-up periods are necessary to determine true value of UAE. In 2012, the ACR revised its Appropriateness Criteria®‡ for the Radiologic Management of Uterine Leiomyomas and concluded that "UAE has shown early success in controlling the symptoms of bleeding with adenomyosis." However, there is a recurrence rate of approximately 40%-50% at 2 years and the long-term durability of UAE is questionable. This was reaffirmed in 2023.

A retrospective study by Smeets (2012) reported on 40 individuals with adenomyosis who were treated with UAE. Mean clinical follow-up was 65 months. A total of 8 individuals required additional therapy due to insufficient symptom relief (7 hysterectomies and 1 repeat UAE). Follow-up consisted of the use of uterine fibroid symptom relief and QOL questionnaires. Of the 33 individuals with a preserved uterus who responded to QOL questionnaires, 29 had scores indicating they were asymptomatic, and 4 individuals had scores indicating substantial clinical symptoms despite embolization. This study is limited by its small sample size and retrospective design.

In 2013 NICE published a uterine artery embolization for treating adenomyosis interventional procedures guidance. The recommended indications include the following:

2.2 Treatment for symptomatic adenomyosis includes anti-inflammatory medications, hormone therapy and endometrial ablation. For severe symptoms that do not respond adequately, hysterectomy has been the conventional surgical treatment. Uterine artery embolization may be an alternative option for patients who do not wish to have hysterectomy and/or who wish to preserve their fertility.

In 2017, de Bruijn and colleagues published a systematic review and meta-analysis with the aim to evaluate UAE for the treatment of adenomyosis. The study selection process yielded 30 studies, which were mainly comprised of retrospective studies with small sample sizes and unclear methodologies. While the authors found an improvement of symptoms in 872 individuals (83.1%) and a reduction of uterine volume in all individuals at 3 months, there were complications in 615 individuals (59%). The authors concluded that UAE could be a treatment alternative to hysterectomy; however, randomized controlled trials are needed to confirm this conclusion. Other study limitations include possible selection bias and lack of comparison to other treatments in the included studies.

Evidence from prospective cohort studies supports the use of UAE for individuals with adenomyosis and fibroids who fail conservative measures and desire uterus-preserving therapy. Prospective cohort studies of individuals with adenomyosis and fibroids demonstrate improvement in quality of life and symptom scores, especially when fibroids predominate (Froeling et al. 2012) In individuals with adenomyosis with or without fibroids, UAE improved symptom scores and quality of life at up to 7 years follow-up. Eighteen percent of individuals underwent hysterectomy for persistent symptoms (Smeets 2012, de Brujin 2017).

Supplemental Information/Definitions

Adenomyosis: A benign uterine disease in which the endometrium invades the myometrium resulting in enlargement of the uterus, menorrhagia and dysmenorrhea.

Cesarean scar pregnancy: A pregnancy that is implanted on or in a scar from a prior cesarean birth.

Ectopic pregnancy: A pregnancy which occurs when a fertilized egg becomes implanted outside the uterus in locations such as the fallopian tubes, cervix, ovaries or in the pelvic or abdominal space.

Embolization: The insertion of a substance through a catheter into a blood vessel to prevent the flow of blood.

Fibroid ablation – A surgical procedure that uses energy to destroy fibroid tissue while avoiding damage to the normal uterine tissue. The fibroids are not removed, but shrink in size.

Hysterectomy – Surgery to remove the entire uterus.

Myomectomy: Procedure in which uterine fibroids are surgically removed from the uterus.

Pedunculated fibroid: Benign (noncancerous) growths in the uterus (fibroids) attached to the uterine wall by a stalk-like growth called a peduncle.

Post-embolization syndrome: A frequent occurrence following uterine artery embolization which peaks about 48 hours post-procedure and is characterized by low-grade fever, pain, fatigue, nausea and vomiting.

Uterine fibroids: Common and benign (non-cancerous) tumors of the uterus (also known as leiomyomata).

References

Peer Reviewed Publications:

1. Badawy SZ, Etman A, Singh M, et al. Uterine artery embolization: the role in obstetrics and gynecology. Clin Imaging. 2001; 25(4):288-295.
2. Barnard EP, AbdElmagied AM, Vaughan LE, et al. Periprocedural outcomes comparing fibroid embolization and focused ultrasound: a randomized controlled trial and comprehensive cohort analysis. Am J Obstet Gynecol. 2017; 216(5):500.e1-500.
3. Berman JM, Guido RS, Garza Leal JG, et al. Three-year outcome from the Halt trial: a prospective analysis of radiofrequency volumetric thermal ablation of myomas. J Minim Invas Gynecol. 2014; 21(5):767-774.
4. Choi HJ, Jeon GS, Kim MD, et al. Is uterine artery embolization for patients with large myomas safe and effective? A retrospective comparative study in 323 patients. J Vasc Interv Radiol. 2013; 24(6):772-778.
5. Das R, Champaneria R, Daniels JP, Belli AM. Comparison of embolic agents used in uterine artery embolisation: a systematic review and meta-analysis. Cardiovasc Intervent Radiol. 2014; 37(5):1179-1190.

6. de Bruijn AM, Ankum WM, Reekers JA, et al. Uterine artery embolization vs hysterectomy in the treatment of symptomatic uterine fibroids: 10-year outcomes from the randomized EMMY trial. Am J Obstet Gynecol. 2016; 215(6):745.e1-745.
7. de Bruijn AM, Smink M, Lohle PNM, et al. Uterine artery embolization for the treatment of adenomyosis: a systematic review and meta-analysis. J Vasc Interv Radiol. 2017; 28(12):1629-1642.
8. Fonseca MCM, Castro R, Machado M, et al. Uterine artery embolization and surgical methods for the treatment of Symptomatic uterine leiomyomas: A systemic review and meta-analysis followed by indirect treatment comparison. Clin Ther. 2017; 39(7):1438-1455.
9. Froeling V, Scheurig-Muenkler C, Hamm B, et al. Uterine artery embolization to treat uterine adenomyosis with or without uterine leiomyomata: results of symptom control and health-related quality of life 40 months after treatment. Cardiovasc Intervent Radiol 2012; 35:523-9.
10. Goodwin SC, Bradley LD, Lipman JC, et al. Uterine artery embolization versus myomectomy: a multicenter comparative study. Fertil Steril. 2006; 85(1):14-21.
11. Goodwin SC, Spies JB Uterine fibroid embolization. N Engl J Med. 2009; 361(7):690-697.
12. Guido, RS, Maier JA, Abbott K, et al. Radiofrequency volumetric thermal ablation of fibroids: a prospective, clinical analysis of two years outcome from the Halt trial. Health Qual Life Outcomes. 2013; 11(1):139.
13. Gun M, Mavrogiorgis M. Cervical ectopic pregnancy: a case report and literature review. Ultrasound Obstet Gynecol. 2002; 19(3):297-301.
14. Gupta JK, Sinha A, Lumsden MA, et al. Uterine artery embolization for symptomatic uterine fibroids. Cochrane Database of Systematic Reviews 2014; (12): CD005073.
15. Havryliuk Y, Setton R, Carlow JJ, Shaktman BD. Symptomatic fibroid management: systematic review of the literature. JSLS. 2017. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5600131/pdf/e2017.00041.pdf.
16. Hirst A, Dutton S, Wu O, et al. A multi-centre retrospective cohort study comparing the efficacy, safety and cost-effectiveness of hysterectomy and uterine artery embolisation for the treatment of symptomatic uterine fibroids. The HOPEFUL study. Health Technol Assess. 2008; 12(5):1-248.
17. Laughlin-Tommaso S, Barnard EP, AbdElmagied AM, et al. FIRSTT study: randomized controlled trial of uterine artery embolization vs focused ultrasound surgery. Am J Obstet Gynecol. 2019; 220(2):174.e1-174.e13.
18. Katsumori T, Akazawa K, Mihara T. Uterine artery embolization for pedunculated subserosal fibroids. AJR Am J Roentgenol. 2005; 184(2):399-402.
19. Kim YS, Han K, Kim MD, et al. Uterine artery embolization for pedunculated subserosal leiomyomas: evidence of safety and efficacy. J Vasc Interv Radiol. 2018; 29(4):497-501.
20. Long Y, Zhu H, Hu Y, et al. Interventions for non-tubal ectopic pregnancy. Cochrane Database of Systematic Reviews 2020; (7):CD011174.
21. Manyonda I, Belli AM, Lumsden MA, et al. Uterine-artery embolization or myomectomy for uterine fibroids. N Engl J Med. 2020; 383(5):440-451.

22. Martin J, Bhanot K, Athreya S. Complications and reinterventions in uterine artery embolization for symptomatic uterine fibroids: a literature review and meta-analysis. Cardiovasc Intervent Radiol. 2013; 36(2):395-402.
23. McLucas B. Repeat uterine artery embolization following technical failure. Minim Invasive Ther Allied Technol. 2009;18(2):78-81.
24. McLucas B, Adler L. Uterine fibroid embolization compared with myomectomy. Int J Gynaecol Obstet. 2001; 74(3):297-299.
25. Moss JG, Cooper KG, Khaund A, et al. Randomised comparison of uterine artery embolisation (UAE) with surgical treatment in patients with symptomatic uterine fibroids (REST trial): 5-year results. BJOG. 2011; 118(8):936-944.
26. Panagiotopoulou N, Nethra S, Karavolos S, et al. Uterine-sparing minimally invasive interventions in women with uterine fibroids: a systematic review and indirect treatment comparison meta-analysis. Acta Obstet Gynecol Scand. 2014; 93(9):858-867.
27. Pelage JP, Le Dref O, Soyer P. Fibroid-related menorrhagia: treatment with superselective embolization of the uterine arteries and midterm follow-up. Radiology. 2000; 215(2):428-431.
28. Popovic M, Puchner S, Berzaczy D, et al. Uterine artery embolization for the treatment of adenomyosis: a review. J Vasc Interv Radiol. 2011; 22(7):901-909.
29. Salazar GM, Petrozza JC, Walker TG. Transcatheter endovascular techniques for management of obstetrical and gynecologic emergencies. Tech Vasc Interv Radiol. 2009; 12(2):139-147.
30. Smeets AJ, Nijenhuis RJ, Boekkooi PF, et al. Long-term follow-up of uterine artery embolization for symptomatic adenomyosis. Cardiovasc Intervent Radiol. 2012; 35(4):815-819.
31. Smeets AJ, Nijenhuis RJ, Boekkooi PF, et al. Safety and effectiveness of uterine artery embolization in patients with pedunculated fibroids. J Vasc Interv Radiol. 2009; 20(9):1172-1175.
32. Spies JB, Bradley LD, Guido R, et al. Outcomes from leiomyoma therapies: comparison with normal controls. Obstet Gynecol. 2010; 116(3):641-652.
33. Toor SS, Jaberi A, Macdonald DB, et al. Complication rates and effectiveness of uterine artery embolization in the treatment of symptomatic leiomyomas: a systematic review and meta-analysis. AJR Am J Roentgenol. 2012; 199(5):1153-1163.
34. van der Kooij SM, Hehenkamp WJ, Volkers NA, et al. Uterine artery embolization vs hysterectomy in the treatment of symptomatic uterine fibroids: 5-year outcome from the randomized EMMY trial. J Obstet Gynecol. 2010; 203(2):105.e1-e13.
35. Yang W, Cheng Z, Yu J, et al. Multicentre study to evaluate the clinical effects of laparoscopic uterine artery occlusion in combination with myomectomy to treat symptomatic uterine leiomyomas. Eur J Obstet Gynecol Reprod Biol. 2016; 204:9-15.
36. Yousefi S, Czeyda-Pommersheim F, White AM, et al. Repeat uterine artery embolization: indications and technical findings. J Vasc Interv Radiol. 2006; 17(12):1923-1929.
37. Zhang J, Go VA, Blanck JF, Singh B. A systematic review of minimally invasive treatments for uterine fibroid-related bleeding. Reprod Sci. 2022; 29(10):2786-2809.

Government Agency, Medical Society, and Other Authoritative Publications:

1. Agency for Healthcare Research and Quality. Management of uterine fibroids. Comparative Effectiveness Report. 2017. Number 195. Available at: https://effectivehealthcare.ahrq.gov/products/uterine-fibroids/research-2017.
2. American College of Obstetricians and Gynecologists (ACOG). Practice Bulletin Number 183. Postpartum hemmorrhage. Obstet Gynecol. 2017; 130(4):e168-e186.
3. American College of Obstetricians and Gynecologists (ACOG). Practice Bulletin Number 817. Options for prevention and management of menstrual bleeding in adolescent patients undergoing cancer treatment. Available at: https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/01/options-for-prevention-and-management-of-menstrual-bleeding-in-adolescent-patients-undergoing-cancer-treatment.
4. American College of Obstetricians and Gynecologists (ACOG). Practice Bulletin Number 96. Alternatives to hysterectomy in the management of leiomyomas. Obstet Gynecol. 2008; 112(2 Pt 1):387-400. Reaffirmed 2019.
5. American College of Radiology. ACR Appropriateness Criteria®. Radiologic management of uterine leiomyomas. Last revised 2023. Available at: https://acsearch.acr.org/docs/69508/Narrative/.
6. Andrews RT, Spies JB, Sacks D, et al. Patient care and uterine artery embolization for leiomyomata. J Vasc Interv Radiol. 2009; 20(7 Suppl):S307-S311.
7. Gupta JK, Sinha A, Lumsden MA, et al. Hickey M. Uterine artery embolization for symptomatic uterine fibroids. Cochrane Database Syst Rev. 2014;(12):CD005073.
8. National Institute for Health and Care Excellence. NICE guidance: Interventional procedure guidance 94. Uterine artery embolisation for fibroids. November 24, 2010. Available at: https://www.nice.org.uk/guidance/ipg367/resources/uterine-artery-embolisation-for-fibroids-pdf-1899867699199429.
9. National Institute for Health and Care Excellence. NICE guidance: Interventional procedure guidance 473. Uterine artery embolisation for treating adenomyosis. December 16, 2013. Available at: https://www.nice.org.uk/guidance/ipg473/chapter/1-Recommendations.
10. U.S. FDA. Uterine Fibroids. Updated June 2022. Available at: https://www.fda.gov/media/159719/download.
11. Vilos GA, Allaire C, Laberge PY, et al. Society of Obstetricians and Gynaecologists of Canada (SOGC) Clinical Practice Guideline. The management of uterine leiomyomas. J Obstet Gynaecol Can. 2015; 37(2):157-181.

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04/15/2003	Medical Policy Committee review
05/12/2003	Managed Care Advisory Council approval
05/04/2004	Medical Director review

05/18/2004	Medical Policy Committee review. Format revision. Clinical criteria revision.
06/28/2004	Managed Care Advisory Council approval
06/07/2005	Medical Director review
06/21/2005	Medical Policy Committee review. Format revision. Patient selection criteria added. Clinical criteria revision to include laparoscopic closure of uterine arteries. Policy title changed from, "Transcatheter Uterine Artery Embolization" to "Occlusion of Uterine Arteries Using Transcatheter Embolization or Laparoscopic Occlusion to Treat Uterine Fibroids".
07/15/2005	Managed 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.
09/06/2006	Medical Director review
09/20/2006	Medical Policy Committee approval. No change to policy guidelines.
11/07/2007	Medical Director review
11/15/2007	Medical Policy Committee approval. No change to policy guidelines.
11/05/2008	Medical Director review
11/18/2008	Medical Policy Committee approval. No change to coverage eligibility.
11/12/2009	Medical Policy Committee approval
11/18/2009	Medical Policy Implementation Committee approval. No change to coverage eligibility.
11/04/2010	Medical Policy Committee approval
11/16/2010	Medical Policy Implementation Committee approval. No change to coverage eligibility.
11/03/2011	Medical Policy Committee approval
11/16/2011	Medical Policy Implementation Committee approval. No change to coverage eligibility.
11/01/2012	Medical Policy Committee review
11/28/2012	Medical Policy Implementation Committee approval. Postpartum uterine hemorrhage added to eligible for coverage statement. Investigational statement added on UAE for management cervical ectopic pregnancy. Statement on repeat UAE changed to state that one repeat procedure may be considered eligible for coverage with a *Note* following the coverage statement.
11/07/2013	Medical Policy Committee review
11/20/2013	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/05/2015	Medical Policy Committee review
02/18/2015	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
08/03/2015	Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section removed.
02/04/2016	Medical Policy Committee review.

02/17/2016	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
02/02/2017	Medical Policy Committee review.
02/15/2017	Medical Policy Implementation Committee approval. Adenomyosis and uterine arteriovenous malformation added to investigational policy statement.
02/01/2018	Medical Policy Committee review.
02/21/2018	Medical Policy Implementation Committee approval. Removed "Based on review of available data, the Company considers laparoscopic occlusion of the uterine arteries using bipolar coagulation to be investigational" from coverage statement.
02/07/2019	Medical Policy Committee review.
02/20/2019	Medical Policy Implementation Committee approval. No change to coverage.
02/06/2020	Medical Policy Committee review.
02/12/2020	Medical Policy Implementation Committee approval. Title changed from "Occlusion of Uterine Arteries Using Transcatheter Embolization or Laparoscopic Occlusion to Treat Uterine Fibroids" to "Occlusion of Uterine Arteries Using Transcatheter Embolization".
02/04/2021	Medical Policy Committee review.
02/10/2021	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/03/2022	Medical Policy Committee review.
02/09/2022	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/02/2023	Medical Policy Committee review.
02/08/2023	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/01/2024	Medical Policy Committee review.
02/14/2024	Medical Policy Implementation Committee approval. Policy extensively rewritten. Title changed from "Occlusion of Uterine Arteries Using Transcatheter Embolization" to "Transcatheter Uterine Artery Embolization".
02/06/2025	Medical Policy Committee review.
02/12/2025	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

Next Scheduled Review Date: 02/2026

Coding

The five character codes included in the Louisiana Blue Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2024 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.

The responsibility for the content of Louisiana Blue Medical Policy Coverage Guidelines is with Louisiana Blue and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Louisiana Blue Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Louisiana Blue Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.

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

Code Type	Code
CPT	37243, 37244
HCPCS	No codes
ICD-10 Diagnosis	All related Diagnoses

*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 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:

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.

‡ Indicated trademarks are the registered trademarks of their respective owners.

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.

NOTICE: Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage.