

## Clinical Policy: Percutaneous Left Atrial Appendage Closure Device for Stroke Prevention

Reference Number: CP.MP.147

Last Review Date: 05/21

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See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

### Description

Atrial fibrillation (AF) is the most commonly encountered sustained tachyarrhythmia and is associated with a 5-fold increased risk of stroke, and stroke risk increases with age.<sup>1</sup> Among patients with non-valvular AF, the vast majority of thrombus material is located within or involves the left atrial appendage (LAA). Most patients with atrial fibrillation should receive anticoagulant therapy to reduce the risk of systemic embolization. However, not all individuals are candidates for this therapy. LAA occlusion devices have been investigated as an alternative to pharmacological therapy to reduce the risk of stroke in these individuals.

### Policy/Criteria

- I. It is the policy of health plans affiliated with Centene Corporation® that the WATCHMAN™ LAA Closure Technology for occlusion of the LAA is **medically necessary** to reduce the risk of stroke in adults with non-valvular AF when both of the following criteria are met:
- A. There is an increased risk for stroke and systemic embolism based on CHADS2 or CHA2DS2-VASc scores and long-term anticoagulation therapy is recommended; and
  - B. Contraindications or unacceptable high risk of bleeding from long-term oral anticoagulants including, but not limited to:
    1. Thrombocytopenia or known coagulation defect associated with bleeding;
    2. Recurrent bleeding, including gastrointestinal, genitourinary, respiratory;
    3. Prior severe bleeding, including intracranial hemorrhage;
    4. Combined use of dual antiplatelet and anticoagulant therapy;
    5. Poor compliance or intolerance with anticoagulant therapy;
    6. High risk of the patient falling or prior falls resulting in injury;
    7. Allergic reactions;
    8. Severe liver disease;
    9. Recent trauma or surgery;
    10. Severe high blood pressure;
    11. Inability to obtain regular international normalized ratios.

Note: Warfarin may be required for at least six weeks after implantation of the Watchman device.

- II. It is the policy of health plans affiliated with Centene Corporation that there is a paucity of evidence regarding the long-term safety and efficacy of all other percutaneous devices for occlusion of the LAA to reduce the risk of stroke in adults with non-valvular atrial fibrillation (other than the WATCHMAN LAA Closure Technology noted above). At this time, no other percutaneous device is FDA approved for this indication.

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#### Background

The individualized assessment of the risk-benefit balance is central to decision making regarding pharmacotherapy for stroke reduction in AF. To estimate stroke risk, the ACC/American Heart Association/HRS Guideline for the Management of Patients with Atrial Fibrillation recommends the use of the CHA<sub>2</sub>DS<sub>2</sub>-VASc point score [Congestive heart failure, Hypertension, Age  $\geq 75$  years (doubled), Diabetes mellitus, prior Stroke, transient ischemic attack, or thromboembolism (doubled), Vascular disease, Age 65 to 74 years, Sex category), which provides an estimate of the potential benefits of therapy. Per the guideline, oral anticoagulation is a class I recommendation for patients with prior stroke, transient ischemic attack (TIA), or a CHA<sub>2</sub>DS<sub>2</sub>-VASc score  $\geq 2$  (estimated annual stroke risk of 2.2%) in the context of shared decision making, including a discussion of risks of stroke and bleeding, and the patient's preferences.<sup>2</sup>

Some patients with AF, whose stroke risk profiles would favor anticoagulation, have relative or absolute contraindications to anticoagulation. Others are unable or unwilling to adhere to long-term anticoagulation therapy. As a result, a number of percutaneous techniques that mechanically prevent embolization of LAA thrombi, often referred to as LAA exclusion procedures, have been investigated as an alternative to pharmacological therapy to reduce the risk of stroke. The percutaneous devices include two broad categories: endocardial plug devices to occlude the ostium of the LAA and epicardial LAA ligation procedures to exclude the LAA. At this time, only the WATCHMAN LAA Closure Technology (Boston Scientific Corporation) has been evaluated in randomized controlled trials compared with the current standard of care. This device has received approval by the Food and Drug Administration (FDA) as an alternative to warfarin for stroke prevention.

The WATCHMAN device is deployed percutaneously via transseptal puncture and has a polyethylene membrane that covers a self-expanding nitinol cage with barbs to anchor the device in the LAA. The early findings for the WATCHMAN device suggest noninferiority to warfarin for the composite endpoint of stroke, systemic embolism, and cardiovascular death; however, early adverse events occur in approximately 10% of patients, including pericardial bleeding. Longer-term follow-up of the WATCHMAN device at 1588 patient-years suggests noninferiority of this device to warfarin.<sup>3</sup> A subsequent registry study demonstrated that the WATCHMAN device achieved noninferiority in patients who could not receive warfarin.<sup>4</sup> Quality of life was assessed in a subset of patients (361 device and 186 warfarin patients) enrolled in the PROTECT AF (Percutaneous Closure of the Left Atrial Appendage Versus Warfarin Therapy for Prevention of Stroke in Patients With Atrial Fibrillation) trial at baseline and 12 months. It was reported that patients with non-valvular AF at risk for stroke, treated with left atrial appendage closure, have favorable QOL changes at 12 months versus patients treated with warfarin.<sup>5</sup>

The available evidence suggests the Watchman device may be potentially beneficial for stroke prevention in adult patients with non-valvular AF at increased risk of stroke and systemic embolism. However, there is uncertainty about whether the benefit outweighs possible harms, given the potential for device-related complications or mortality.<sup>22</sup> Percutaneous LAA closure is associated with a measurable risk of serious procedure-/device-related complications (e.g., major bleeding, pericardial effusion, stroke, device embolization, cardiac perforation or tamponade) with reported mortality rates ranging from 0% to 4%.<sup>22</sup>

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The LARIAT device (SentreHEART) has FDA approval to facilitate suture placement and knot tying in surgical applications where soft tissues are being approximated or ligated with a pre-tied polyester suture. The FDA has not evaluated the use of the LARIAT Suture Delivery Device for LAA closure to reduce the risk of stroke in atrial fibrillation patients. In fact, the FDA has alerted health care providers and patients of reports of patient deaths and other serious adverse events associated with the use of the LARIAT Suture Delivery Device for this off label indication.

The FDA-approved AtriClip LAA Exclusion System is indicated for the occlusion of the heart's LAA, performed under direct visualization and in conjunction with other cardiac surgical procedures. Direct visualization, in this context, requires that the surgeon is able to see the heart directly, with or without assistance from a camera, endoscope, etc., or other appropriate viewing technologies. The American Heart Association/American College of Cardiology/ Heart Rhythm Society (AHA/ACC/HRS) concludes that the current data on LA occlusion at the time of concomitant cardiac surgery reveal a lack of clear consensus because of the inconsistency of techniques used for surgical excision, the highly variable rates of successful LAA occlusion, and the unknown impact of LAA occlusion on future thromboembolic events.<sup>1</sup> Per the AHA/ACC/HRS, surgical excision of the LAA may be considered in patients undergoing cardiac surgery. (Iib recommendation- usefulness/efficacy is less well established.)

Various other devices continue to be investigated and some have European Conformity (CE) approval in Europe for LAA closure but they do not have FDA approval in the US. Some examples include Amplatzer cardiac plug, redesigned as the Amplatzer Amulet (St. Jude Medical), WaveCrest (Coherex Medical), LAmBRE (Lifetech Scientific Corp), Occlutech LAA Occluder (Occlutech International AB), and the Cardia Ultrasept LAA Occluder (Cardia).

#### *National Institute for Health and Clinical Excellence (NICE)*

Current evidence suggests that percutaneous occlusion of the LAA is efficacious in reducing the risk of thromboembolic complications associated with nonvalvular AF. With regard to safety, there is a risk of life-threatening complications from the procedure, but the incidence of these is low. Therefore, this procedure may be used, provided that normal arrangements are in place for clinical governance, consent and audit.<sup>7</sup>

#### *European Society of Cardiology*

Guidelines for the Management of Atrial Fibrillation states LAA occlusion may be considered for stroke prevention in patients with AF and contraindications for long-term anticoagulant treatment. (Class Iib recommendation-usefulness/efficacy is less well established by evidence/opinion.)<sup>9</sup>

#### *American Heart Association/American College of Cardiology/ Heart Rhythm Society*

The latest guideline on the management of patients with atrial fibrillation (2014) briefly addresses percutaneous approaches to occlude the LAA, but does not include recommendations for the use of these devices. At the time of the development of the guideline, no percutaneous LAA closure device had an FDA-approval labeled for the indication of stroke prevention.<sup>1</sup>

## Coding Implications

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This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2021, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

CPT® Codes	Description
33340	Percutaneous transcatheter closure of the left atrial appendage with endocardial implant, including fluoroscopy, transseptal puncture, catheter placement(s), left atrial angiography, left atrial appendage angiography, when performed, and radiological supervision and interpretation

HCPCS Codes	Description
N/A	

#### ICD-10-CM Diagnosis Codes that Support Coverage Criteria

ICD-10-CM Code	Description
I48.11-148.19	Persistent atrial fibrillation
I48.20-148.21	Chronic atrial fibrillation
I48.91	Unspecified atrial fibrillation

Reviews, Revisions, and Approvals	Date	Approval Date
Policy adopted from Health Net NMP 376, Left Atrial Appendage Devices	06/17	07/17
Clarified in I.A and I.B that the anticoagulation therapy recommended is for “long-term” use. Updated background information to include possible complication associated with the device. Revised information under section “AHA/ACC/HRS” for clarification purposes. References reviewed and updated.	05/18	05/18
References reviewed and updated. Coding reviewed.	04/19	05/19
References reviewed and updated. I48.1 updated to I48.11-I48.19 and I48.2 updated to I48.20-I48.21	04/20	05/20
Replaced “investigational” in II with “there is a paucity of evidence regarding the long-term safety and efficacy of all other percutaneous devices for occlusion of the LAA ...” References reviewed and updated. Verbiage edits to I.B, adding contraindications of 1.-11, in addition to the note regarding Warfarin.	04/21	05/21

**References**

1. January CT, Wann LS, Alpert JS, et al. 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients With Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *Circulation* 2019 Jan 28.
2. Masoudi FA, Calkins H, Kavinsky CJ, et al. 2015 ACC/HRS/SCAI Left Atrial Appendage Occlusion Device Societal Overview. *Heart Rhythm*. 2015 Oct;12(10):e122-36.
3. Reddy VY, Doshi SK, Siever H, et al. Percutaneous left atrial appendage closure for stroke prophylaxis in patients with atrial fibrillation: 2.3 year follow-up of the PROTECT AF Trial (Watchman left atrial appendage system for embolic protection in patients with atrial fibrillation) trial. *Circulation* 2013;127:720–9.
4. Reddy VY, Mobius-Winkler S, Miller MA, et al. Left atrial appendage closure with the Watchman device in patients with a contraindication for oral anticoagulation: the ASAP study (ASA Plavix Feasibility Study With Watchman Left Atrial Appendage Closure Technology). *J Am Coll Cardiol* 2013;61:2551–6.
5. Alli O, Doshi S, Kar S, et al. Quality of life assessment in the randomized PROTECT AF (Percutaneous Closure of the Left Atrial Appendage Versus Warfarin Therapy for Prevention of Stroke in Patients With Atrial Fibrillation) trial of patients at risk for stroke with nonvalvular atrial fibrillation. *J Am Coll Cardiol*. 2013 Apr 30;61(17):1790-8.
6. National Institute for Health and Clinical Evidence (NICE). Percutaneous occlusion of the left atrial appendage in non-valvular atrial fibrillation for the prevention of thromboembolism. *Interventional procedures guidance (IPG349)* June 2010.
7. U.S. Food and Drug Administration. Summary and Safety and Effectiveness Data. WATCHMAN LAA Closure Technology. Mar 2015.
8. Kirchhof P, Benussi S, Kotecha D, et al. 2016 ESC Guidelines for the Management of Atrial Fibrillation Developed in Collaboration With EACTS. *Rev Esp Cardiol (Engl Ed)*. 2017 Jan;70(1):50.
9. Reddy VY, Holmes D, Doshi SK, Neuzil P, Kar S. Safety of percutaneous left atrial appendage closure: results from the Watchman Left Atrial Appendage System for Embolic Protection in Patients with AF (PROTECT AF) clinical trial and the Continued Access Registry. *Circulation* 2011;123:417-24.
10. Sahay S, Nombela-Franco L, Rodes-Cabau J, et al. Efficacy and safety of left atrial appendage closure versus medical treatment in atrial fibrillation: a network meta-analysis from randomised trials. *Heart*. 2017 Jan 15;103(2):139-147.
11. Belgaid DR, Khan Z, Zaidi M, Hobbs A. Prospective randomized evaluation of the watchman left atrial appendage closure device in patients with atrial fibrillation versus long-term warfarin therapy: The PREVAIL trial. *Int J Cardiol*. 2014 Sep 15;219:177-9.
12. Price MJ, Reddy VY, Valderrábano M, et al. Bleeding Outcomes After Left Atrial Appendage Closure Compared With Long-Term Warfarin: A Pooled, Patient-Level Analysis of the WATCHMAN Randomized Trial Experience. *JACC Cardiovasc Interv*. 2015 Dec 28;8(15):1925-32
13. Holmes DR Jr, Doshi SK, Kar S, et al. Left Atrial Appendage Closure as an Alternative to Warfarin for Stroke Prevention in Atrial Fibrillation: A Patient-Level Meta-Analysis. *J Am Coll Cardiol*. 2015 Jun 23;65(24):2614-23.

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14. Holmes DR Jr, Kar S, Price MJ, et al. Prospective randomized evaluation of the Watchman Left Atrial Appendage Closure device in patients with atrial fibrillation versus long-term warfarin therapy: the PREVAIL trial. *J Am Coll Cardiol*. 2014 Jul 8;64(1):1-12.
15. Bajaj NS, Parashar A, Agarwal S, et al. Percutaneous left atrial appendage occlusion for stroke prophylaxis in nonvalvular atrial fibrillation: a systematic review and analysis of observational studies. *JACC Cardiovasc Interv*. 2014 Mar;7(3):296-304.
16. Chun KR, Bordignon S, Urban V, et al. Left atrial appendage closure followed by 6 weeks of antithrombotic therapy: a prospective single-center experience. *Heart Rhythm*. 2013 Dec;10(12):1792-9.
17. Holmes DR, Reddy VY, Turi ZG, et al. Percutaneous closure of the left atrial appendage versus warfarin therapy for prevention of stroke in patients with atrial fibrillation: a randomised non-inferiority trial. *Lancet*. 2009 Aug 15;374(9689):534-42.
18. Pillarisetti J, Reddy YM, Gunda S, et al. Endocardial (Watchman) vs epicardial (Lariat) left atrial appendage exclusion devices: Understanding the differences in the location and type of leaks and their clinical implications. *Heart Rhythm*. 2015 Jul;12(7):1501-7.
19. Gloekler S, Shakir S, Doblies J, et al. Early results of first versus second generation Amplatzer occluders for left atrial appendage closure in patients with atrial fibrillation. *Clin Res Cardiol*. 2015 Aug;104(8):656-65.
20. Tzikas A, Shakir S, Gafoor S, et al. Left atrial appendage occlusion for stroke prevention in atrial fibrillation: multicentre experience with the AMPLATZER Cardiac Plug. *EuroIntervention*. 2016 Feb;11(10):1170-9.
21. Hayes Medical Technology Directory. Comparative Effectiveness Review. Percutaneous Left Appendage Closure to Reduce Stroke Risk in Patients with Atrial Fibrillation. Feb 2018. Accessed April 22, 2021.
22. Hijazi ZM, Saw J. Atrial fibrillation: Left atrial appendage occlusion. In: UpToDate, Knight BP (Ed), UpToDate, Waltham, MA, 2020. Accessed April 22, 2021.
23. Hijazi ZM, Saw J. Nonpharmacologic therapy to prevent embolization in patients with atrial fibrillation. In: UpToDate, Knight BP (Ed), UpToDate, Waltham, MA, 2015. Accessed April 22, 2021.
24. Reddy VY, Doshi SK, Kar S, et al. 5-Year Outcomes After Left Atrial Appendage Closure: From the PREVAIL and PROTECT AF Trials. *J Am Coll Cardiol*. 2017 Dec 19;70(24):2964-2975. doi: 10.1016/j.jacc.2017.10.021. Epub 2017 Nov 4  
*European Heart Journal*, Volume 39, Issue 13, 01 April 2018, Page 1109
25. Boersma LV, Ince H, Kische S, et al. Evaluating Real-World Clinical Outcomes in Atrial Fibrillation Patients Receiving the WATCHMAN Left Atrial Appendage Closure Technology: Final 2-Year Outcome Data of the EWOLUTION Trial Focusing on History of Stroke and Hemorrhage. *Circ Arrhythm Electrophysiol*. 2019;12(4):e006841. doi:10.1161/CIRCEP.118.006841
26. Hayes Technology Assessment. Left Atrial Appendage Exclusion with the AtriClip System in Patients with Atrial Fibrillation. Mar 11, 2021. Accessed Apr 22, 2021.

#### **Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional

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organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

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**Note: For Medicaid members/enrollees**, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

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**Note: For Medicare members/enrollees,** to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

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