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

Reference Number: CP.MP.147 Coding Implications
Date of Last Revision: 03/25 Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Atrial fibrillation (AF), the most commonly encountered sustained tachyarrhythmia, is associated with a five-fold increased risk of stroke, and stroke risk increases with age.[1] 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 AF 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 researched 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 Federal Drug Administration (FDA) approved percutaneous devices (i.e., WATCHMAN™, WATCHMAN FLX™, and Amplatzer™ Amulet™) for occlusion of the left atrial appendage (LAA) are **medically necessary** to reduce the risk of stroke in adults with non-valvular atrial fibrillation (AF) when all of the following criteria are met:

A. There is an increased risk for stroke and systemic embolism based on $CHADS_2$ or CHA_2DS_2-VASc scores, and long-term anticoagulation therapy is recommended;
B. Contraindications or unacceptable high risk of bleeding from long-term oral anticoagulants;
C. Ability to tolerate short-term anticoagulants.

II. It is the policy of health plans affiliated with Centene Corporation that current research does not support the use of percutaneous devices other than those noted above for occlusion of the LAA to reduce the risk of stroke in adults with non-valvular AF. There is a paucity of evidence regarding the long-term safety and efficacy of all other percutaneous devices for occlusion of the LAA, and at this time, no other devices are FDA approved for this indication.

Background

The individualized assessment of the risk-benefit balance is central to decision making regarding pharmacotherapy for stroke reduction in atrial fibrillation (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_2DS_2-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 to74 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_2DS_2-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.[2]

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 left atrial appendage (LAA) thrombi, often referred to as LAA exclusion procedures, have been studied 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.

Currently, the WATCHMAN, WATCHMAN FLX, and the Amplatzer Amulet are the only FDA-approved percutaneous LAA closure devices.

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.[3] A subsequent registry study demonstrated that the WATCHMAN device achieved noninferiority in patients who could not receive warfarin. 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, had favorable quality of life changes at 12 months versus patients treated with warfarin.[4]

The PREVAIL study was mandated by the US FDA to further evaluate the safety profile and confirm the efficacy of the WATCHMAN device for regulatory approval. This study randomly assigned 407 patients in a 2:1 ratio to WATCHMAN or warfarin. Results from the five-year outcomes of the PREVAIL trial and the PROTECT AF trial demonstrated that LAA closure with the WATCHMAN device provided stroke prevention in nonvalvular AF that was comparable to warfarin and included additional reductions in major bleeding and mortality.[20]

The newer-generation WATCHMAN FLX is FDA approved and is widely replacing the WATCHMAN device in most centers.[20] The WATCHMAN FLX comes in five sizes with a slightly broader range of dimensions than the WATCHMAN. This device has a distal rounded edge and double row stabilizing anchors, which improves the safety of the procedure.[20,24] A single-arm prospective registry of 400 patients, the PINNACLE FLX study, concluded that LAA closure with the WATCHMAN FLX device was associated with a low incidence of adverse events and a high incidence of anatomic closure.[20,24]

The second-generation Amplatzer Cardiac Plug device, the Amulet, received FDA approval in 2021, and includes design advances such as larger lobe size for occluding larger appendages and more stabilizing wires, which improves device stability. A key difference in the Amulet device is

the possibility for patients to be discharged without oral anticoagulation immediately after the device has been implanted.[25] A multicenter registry report including 1,088 patients showed 99% procedural success with 3.2% of patients having major adverse events.[20] The Amulet IDE trial included 1,878 patients with AF who were randomly assigned to receive either the Amulet or WATCHMAN percutaneous LAA occlusion device. Follow up at 18 months showed similar results between the devices with a 2.8% rate of ischemic stroke or systemic embolism.

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.[5,26] LAA occlusion should not be offered as an alternative unless anticoagulation is contraindicated or not tolerated.[26]

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.)[8]

American Heart Association/American College of Cardiology/ Heart Rhythm Society
The latest guideline on the management of patients with atrial fibrillation is a 2019 update of the 2014 AHA/ACC/HRS guidelines. This update addresses percutaneous approaches to occlude the LAA and has a new recommendation that percutaneous LAA occlusion may be considered in patients with AF at increased risk of stroke who have contraindications to long-term anticoagulation. FDA approval of the WATCHMAN and clinical trial data necessitated this recommendation.[1]

Coding Implications
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 2024, 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

Reviews, Revisions, and Approvals	Revision 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
Annual Review. Updated criteria I and criteria II to include all FDA approved percutaneous devices for occlusion of the LAA (WATCHMAN, WATCHMAN FLX, Amplatzer Amulet) and removed verbiage that the WATCHMAN is the only FDA approved device. Updated background to include information on WATCHMAN FLX and Amplatzer Amulet devices with updated notation that both devices are FDA approved and removed verbiage that the WATCHMAN is the only FDA approved device. Updated AHA/ACC/HRS recommendation in background. References reviewed and updated. Changed "Review Date" in policy header to "Date of Last Revision," and "Date" in the revision log header to "Revision Date." Specialist reviewed.	05/22	05/22
Annual review completed. Minor rewording with no clinical significance. Background updated with no impact to clinical criteria. ICD-10 diagnosis code table removed. References reviewed and updated.	05/23	05/23
Annual review. References reviewed and updated. Reviewed by external specialist.	05/24	05/24
Annual review. Changed "both" to "all" of the following in criteria I. Removed contraindications I.B.1.-I.B.11. Thrombocytopenia or known coagulation… Added criteria I.C. "Ability to tolerate short-term anticoagulants". Removed Note: Warfarin may be required… References reviewed and updated. Reviewed by internal specialist.	03/25	03/25

References

1. January CT, Wann LS, Calkins H, 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 in Collaboration With the Society of Thoracic Surgeons [published correction appears in Circulation. 2019 Aug 6;140(6):e285]. *Circulation*. 2019;140(2):e125 to e151. doi:10.1161/CIR.0000000000000665

2. Masoudi FA, Calkins H, Kavinsky CJ, et al. 2015 ACC/HRS/SCAI left atrial appendage occlusion device societal overview. *Heart Rhythm*. 2015;12(10):e122 to e136. doi:10.1016/j.hrthm.2015.06.034
3. Reddy VY, Doshi SK, Sievert 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 (Watchman Left Atrial Appendage System for Embolic Protection in Patients with Atrial Fibrillation) Trial. *Circulation*. 2013;127(6):720 to 729. doi:10.1161/CIRCULATIONAHA.112.114389
4. Reddy VY, Möbius-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(25):2551 to 2556. doi:10.1016/j.jacc.2013.03.035
5. National Institute for Health and Care Excellence. Percutaneous occlusion of the left atrial appendage in non-valvular atrial fibrillation for the prevention of thromboembolism - Interventional procedures guidance [IPG349]. https://www.nice.org.uk/guidance/ipg349. Published June 23, 2010. Accessed February 6, 2025.
6. U.S. Food and Drug Administration. WATCHMAN Left atrial appendage closure device with delivery system and WATCHMAN FLX left atrial appendage closure device with delivery system - P130013/S035. https://www.fda.gov/medical-devices/recently-approved-devices/watchman-left-atrial-appendage-closure-device-delivery-system-and-watchman-flx-left-atrial-appendage. Published August 11, 2020. Accessed February 6, 2025.
7. Kirchhof P, Benussi S, Kotecha D, et al. 2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS [published correction appears in Rev Esp Cardiol (Engl Ed). 2017 Nov;70(11):1031]. *Rev Esp Cardiol (Engl Ed)*. 2017;70(1):50. doi:10.1016/j.rec.2016.11.033
8. 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(4):417 to 424. doi:10.1161/CIRCULATIONAHA.110.976449
9. 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;103(2):139 to 147. doi:10.1136/heartjnl-2016-309782
10. 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*. 2016;219:177 to 179. doi:10.1016/j.ijcard.2016.06.041
11. 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;8(15):1925 to 1932. doi:10.1016/j.jcin.2015.08.035
12. 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;65(24):2614 to 2623. doi:10.1016/j.jacc.2015.04.025
13. 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 [published correction appears in J Am Coll Cardiol. 2014 Sep 16;64(11):1186]. *J Am Coll Cardiol*. 2014;64(1):1 to 12. doi:10.1016/j.jacc.2014.04.029
14. 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;7(3):296 to 304. doi:10.1016/j.jcin.2013.11.010
15. 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;10(12):1792 to 1799. doi:10.1016/j.hrthm.2013.08.025
16. 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 [published correction appears in Lancet. 2009 Nov 7;374(9701):1596]. *Lancet*. 2009;374(9689):534 to 542. doi:10.1016/S0140-6736(09)61343-X
17. 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;12(7):1501 to 1507. doi:10.1016/j.hrthm.2015.03.020
18. 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;104(8):656 to 665. doi:10.1007/s00392-015-0828-1
19. 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;11(10):1170 to 1179. doi:10.4244/EIJY15M01_06
20. Hijazi ZM, Saw J. Atrial fibrillation: Left atrial appendage occlusion. UpToDate. www.uptodate.com. Updated October 11, 2024. Accessed February 6, 2025.
21. 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;70(24):2964 to 2975. doi:10.1016/j.jacc.2017.10.021
22. 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
23. Health Technology Assessment. Left atrial appendage exclusion with the AtriClip system in patients with atrial fibrillation. Hayes. www.hayesinc.com. Published March 11, 2021 (annual review April 11, 2024). Accessed February 6, 2025.
24. Kar S, Doshi SK, Sadhu A, et al. Primary outcome evaluation of a next-generation left atrial appendage closure device: results from the pinnacle flx trial. *Circulation*. 2021;143(18):1754 to 1762. doi:10.1161/CIRCULATIONAHA.120.050117
25. Abbott website. Structural Interventions Amplatzer Amulet LAA Occluder. https://www.structuralheart.abbott/products/laa-closure-device/amplatzer-amulet-laa-occluder. Accessed February 6, 2025.
26. National Institute for Health and Care Excellence. Atrial fibrillation: diagnosis and management [IPG196]. https://www.nice.org.uk/guidance/ng196/chapter/Recommendations#initial-management-of-

stroke-and-atrial-fibrillation Published April 27, 2021 (updated June 30, 2021). Accessed February 6, 2025.
27. Health Technology Assessment. Comparative effectiveness review of transcatheter closure of patent foramen ovale for prevention of recurrent cryptogenic stroke. Hayes. www.hayesinc.com. Published May 31, 2018 (annual review June 7, 2022). Accessed February 6, 2025.
28. Glikson M, Wolff R, Hindricks G, et al. EHRA/EAPCI expert consensus statement on catheter-based left atrial appendage occlusion - an update. *Europace*. 2020;22(2):184. doi:10.1093/europace/euz258
29. Manning WJ, Singer DE, Lip GYH. Atrial fibrillation in adults: selection of candidates for anticoagulation. UpToDate. www.uptodate.com. Updated September 25, 2024. Accessed February 6, 2025.
30. *Amplatzer™ Amulet™ Left Atrial Appendage Occluder Instructions for Use*. https://www.accessdata.fda.gov/cdrh_docs/pdf20/P200049C.pdf
31. Mesnier J, Cepas-Guillen P, Freixa X, et al. Antithrombotic Management After Left Atrial Appendage Closure: Current Evidence and Future Perspectives. *Circulation-cardiovascular Interventions*. 2023;16(5). doi: 10.1161/circinterventions.122.012812

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 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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