



MASSACHUSETTS

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Medical Policy

Open and Thoracoscopic Approaches to Treat Atrial Fibrillation and Atrial Flutter (Maze and Related Procedures)

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Policy Number: 356

BCBSA Reference Number: 7.01.14 (For Plan internal use only)

NCD/LCD: N/A

Related Policies

- Catheter Ablation as Treatment of Atrial Fibrillation, #[141](#)
- Percutaneous Left Atrial Appendage Closure Devices for Stroke Prevention in Atrial Fibrillation, #[334](#)

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO BlueSM and Medicare PPO BlueSM Members

The maze procedure or modified procedure, performed on a non-beating heart during cardiopulmonary bypass with concomitant cardiac surgery, is considered **MEDICALLY NECESSARY** for the treatment of symptomatic atrial fibrillation or flutter.

Stand-alone minimally invasive, off-pump maze procedures (ie, modified maze procedures), including those done via mini-thoracotomy, are considered **INVESTIGATIONAL** for treatment of atrial fibrillation or flutter.

Hybrid ablation (defined as a combined percutaneous and thoracoscopic approach) is considered **INVESTIGATIONAL** for the treatment of atrial fibrillation or flutter.

The use of an open maze or modified maze procedure performed on a non-beating heart during cardiopulmonary bypass without concomitant cardiac surgery is considered **NOT MEDICALLY NECESSARY** for treatment of symptomatic atrial fibrillation or flutter.

Prior Authorization Information

Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

	Outpatient
Commercial Managed Care (HMO and POS)	This procedure is performed in the inpatient setting
Commercial PPO and Indemnity	This procedure is performed in the inpatient setting
Medicare HMO BlueSM	This procedure is performed in the inpatient setting
Medicare PPO BlueSM	This procedure is performed in the inpatient setting

CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The above medical necessity criteria MUST be met for the following codes to be covered for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

CPT Codes

CPT codes:	Code Description
33256	Operative tissue ablation and reconstruction of atria, extensive (e.g., maze procedure); with cardiopulmonary bypass
33257	Operative tissue ablation and reconstruction of atria, performed at the time of other cardiac procedure(s), limited (e.g., modified maze procedure) (List separately in addition to code for primary procedure)
33259	Operative tissue ablation and reconstruction of atria, performed at the time of other cardiac procedure(s), extensive (e.g., maze procedure), with cardiopulmonary bypass (List separately in addition to code for primary procedure)

ICD-10 Procedure Codes

ICD-10 procedure codes:	Code Description
02560ZZ	Destruction of Right Atrium, Open Approach
02563ZZ	Destruction of Right Atrium, Percutaneous Approach
02570ZZ	Destruction of Left Atrium, Open Approach
02573ZZ	Destruction of Left Atrium, Percutaneous Approach

The following CPT codes are considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

CPT Codes

CPT codes:	Code Description
33254	Operative tissue ablation and reconstruction of atria, limited (e.g., modified maze procedure)
33255	Operative tissue ablation and reconstruction of atria, extensive (e.g., maze procedure); without cardiopulmonary bypass

33258	Operative tissue ablation and reconstruction of atria, performed at the time of other cardiac procedure(s), extensive (e.g., maze procedure), without cardiopulmonary bypass (List separately in addition to code for primary procedure)
33265	Endoscopy, surgical; operative tissue ablation and reconstruction of atria, limited (e.g., modified maze procedure), without cardiopulmonary bypass
33266	Endoscopy, surgical; operative tissue ablation and reconstruction of atria, limited (e.g., maze procedure), without cardiopulmonary bypass

Description

Atrial Fibrillation

Atrial fibrillation (AF) is a supraventricular tachyarrhythmia characterized by disorganized atrial activation with ineffective atrial ejection. The underlying mechanism of AF involves the interplay between electrical triggering events that initiate AF and the myocardial substrate that permits propagation and maintenance of the aberrant electrical circuit. The most common focal trigger of AF appears to be located within the cardiac muscle that extends into the pulmonary veins. The atria are frequently abnormal in patients with AF and demonstrate enlargement or increased conduction time. Atrial flutter is a variant of AF.

Epidemiology

In the US, more than 3 to 6 million people have AF and it has been estimated that more than 12 million people will have AF by 2030.^{1,2,3} Age, body mass index, height, hypertension, diabetes mellitus, obstructive sleep apnea, myocardial infarction, heart failure, hyperthyroidism, chronic kidney disease, smoking, moderate to heavy alcohol consumption, and genetic predisposition are all risk factors for AF.^{4,3} Age-adjusted AF incidence and prevalence is higher among men than women, although the lifetime risk is similar at 24% for men and 22% for women⁵. AF incidence and prevalence appear lower in individuals who are Black compared to White, despite a higher burden of comorbidities. However, this difference is likely largely explained by differential detection of AF by race/ethnicity.⁶

Treatment

The first-line treatment for AF usually includes medications to maintain sinus rhythm and/or control the ventricular rate. Antiarrhythmic medications are only partially effective; therefore, medical treatment is not sufficient for many patients. Percutaneous catheter ablation, using endocardial ablation, is an accepted second-line treatment for patients who are not adequately controlled on medications and may also be used as first-line treatment. Catheter ablation (CA) is successful in maintaining sinus rhythm for most patients, but long-term recurrences are common and increase over time. Performed either by open surgical techniques or thoracoscopy, surgical ablation is an alternative approach to percutaneous CA.

Summary

There are various surgical approaches to treat atrial fibrillation (AF) that work by interrupting abnormal electrical activity in the atria. Open surgical procedures, such as the Cox maze procedure were first developed for this purpose and are now generally performed in conjunction with valvular or coronary artery bypass graft surgery. Surgical techniques have evolved to include minimally invasive approaches that use epicardial radiofrequency ablation, a thoracoscopic or mediastinal approach, and hybrid catheter ablations/open procedures.

For individuals who have symptomatic AF or flutter who are undergoing cardiac surgery with bypass who received a Cox maze or a modified maze procedure, the evidence includes several randomized controlled trials (RCTs) and nonrandomized comparative studies, along with systematic reviews of these studies. Relevant outcomes are overall survival, medication use, and treatment-related morbidity. Several small RCTs have provided most of the direct evidence confirming the benefit of a modified maze procedure for patients with AF who are undergoing mitral valve surgery. These trials have established that the addition of a modified maze procedure results in a lower incidence of atrial arrhythmias following surgery, with minimal additional risks. Observational studies have supported these RCT findings. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have symptomatic, drug-resistant AF or flutter who are not undergoing cardiac surgery with bypass who receive minimally invasive, off-pump thoracoscopic maze procedures, the evidence includes RCTs and observational studies, some of which identify control groups. Relevant outcomes are overall survival, medication use, and treatment-related morbidity. Two RCTs reported significantly higher rates of freedom from AF at 1-year with surgical ablation but also reported significantly higher rates of serious adverse events. The remaining 2 RCTs found no significant differences between treatment groups in rates of freedom from AF and either did not assess or did not find significant differences in serious adverse events. The comparative observational studies consistently found significantly higher rates of freedom from atrial arrhythmias but lacked assessment of serious adverse events. The noncomparative studies generally only reported short-term outcomes and did not consistently report adverse events. Therefore, this evidence does not permit definitive conclusions about whether a specific approach is superior to the other. Factors, such as previous treatment, the probability of maintaining sinus rhythm, the risk of complications, contraindications to anticoagulation, and patient preference, may all affect the risk-benefit ratio for each procedure. Additionally, the studies do not permit conclusions about harm due to heterogeneous measurement across studies, with mixed results. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who have symptomatic, drug-resistant AF or flutter who are not undergoing cardiac surgery with bypass who receive hybrid thoracoscopic and endocardial ablation procedures, the evidence includes 4 RCTs (sample sizes ranging from 41 to 153) , nonrandomized studies that compared a 'convergent' hybrid approach (ie, epicardial approach combined with endocardial ablation) to catheter ablation (CA) , and 1 observational study that compared a thoracoscopic epicardial ablation with a percutaneous trans-septal procedure hybrid approach to CA. Pooled evidence from randomized and nonrandomized studies found an increased rate of AF-free survival and increased risk of periprocedural adverse events with hybrid procedures relative to standard ablation. Adverse events after the periprocedural period have not been reported. Multicenter RCTs are needed that assess both benefits and harms with at least 1-year of follow-up. At least 2 RCTs of hybrid procedures have been completed but not published. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Policy History

Date	Action
5/2024	Clarified prior authorization table
7/2023	Annual policy review. Description, summary, and references updated. Policy statements unchanged.
6/2022	Annual policy review. Description, summary, and references updated. Policy statements unchanged.
6/2021	Annual policy review. Description, summary, and references updated. Policy statements unchanged.
7/2020	Annual policy review. Description, summary, and references updated. Policy statements unchanged.
6/2019	Annual policy review. Description, summary, and references updated. Policy statements unchanged.
10/2017	Annual policy review. "Drug resistant" removed from medically necessary statement and not medically necessary statement. Effective 10/1/2017.
7/2016	Annual policy review. New references added.
12/2015	Annual policy review. New not medically necessary indications described. The phrase "without concomitant cardiac surgery" was removed from the medically necessary policy statement. Title revised to include Atrial Flutter. Clarified coding information. Effective 12/1/2015.
9/2014	Annual policy review. New references added.
6/2014	Updated Coding section with ICD10 procedure and diagnosis codes. Effective 10/2015.
1/2014	Annual policy review. New investigational indications described. Effective 1/1/2014.

12/2013	Removed ICD-9 diagnosis codes 427.31, 427.32 as the policy is requires prior authorization.
7/2013	Annual policy review. Added “or modified” and “(i.e., modified maze procedures)” to the policy statements. Effective 7/1/2013.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
4/2011	Reviewed - Medical Policy Group - Cardiology and Pulmonology. No changes to policy statements.
4/2010	Reviewed - Medical Policy Group - Cardiology and Pulmonology. No changes to policy statements.
4/2009	Reviewed - Medical Policy Group - Cardiology and Pulmonology. No changes to policy statements.
4/2008	Reviewed - Medical Policy Group - Cardiology and Pulmonology. No changes to policy statements.
8/2007	Annual policy review. Changes to policy statements.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

[Medical Policy Terms of Use](#)

[Managed Care Guidelines](#)

[Indemnity/PPO Guidelines](#)

[Clinical Exception Process](#)

[Medical Technology Assessment Guidelines](#)

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