



2020 CODING AND REIMBURSEMENT FOR

Cardiac Ablation and Left Atrial Appendage Management

AtriCure

2020 Coding and Reimbursement Considerations

Introduction

This information is shared for educational purposes and current as of January 2020. Healthcare providers are solely responsible for the accuracy of codes selected for the services rendered and reported in the patient's medical record. AtriCure does not assume responsibility for coding decisions, nor recommend codes for specific cases. Items and services that are billed to payers must be medically necessary and supported by appropriate documentation. AtriCure does not promote the off-label use of its devices. While a code may exist describing certain procedures and/or technologies, this does not guarantee payment by payers.

Product Offerings

AtriCure product offering includes: Bipolar Radiofrequency (RF) and Cryoablation surgical ablation devices; the AtriClip® Left Atrial Appendage Management System (LAAM); EPI-Sense® coagulation device, LARIAT® suture delivery device and cryoICE® cryo nerve block (cryoNB).

Table 1. Physician Coding and Reimbursement*

Current Procedure Terminology (CPT®) are codes describing the procedure during the patient visit. CPT codes that may be appropriate for procedures used in conjunction with cardiac ablation surgery, catheter ablation or LAAM are included below.

CPT**	Description	CY 2020 Total Facility Relative Value Units (RVUs)***	CY 2020 Physician Work RVU	CY 2020 National Payment Rates
Cardiac Surgical Ablation				
33250	Operative ablation of supraventricular arrhythmogenic focus or pathway without cardiopulmonary bypass	42.12	25.90	\$1,520.09
33251	Operative ablation of supraventricular arrhythmogenic focus or pathway with cardiopulmonary bypass	47.07	28.92	\$1,698.74
33254	Operative tissue ablation and reconstruction of atria, limited (e.g., modified Maze procedure)	39.09	23.71	\$1,410.74
33255	Operative tissue ablation and reconstruction of atria, extensive (e.g., Maze procedure); without cardiopulmonary bypass	47.08	29.04	\$1,699.10
33256	Operative tissue ablation and reconstruction of atria, extensive (e.g., Maze procedure); with cardiopulmonary bypass	56.08	34.90	\$2,023.90
*33257	Operative tissue ablation and reconstruction of atria, performed at the time of other cardiac procedure(s), limited (e.g., modified Maze procedure)	16.80	9.63	\$606.31
*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	18.78	11.00	\$677.76
*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	24.38	14.14	\$879.86
33265	Endoscopy, surgical; operative tissue ablation and reconstruction of atria, limited (e.g., modified Maze procedure); without cardiopulmonary bypass	39.30	23.71	\$1,418.32
33266	Endoscopy, surgical; operative tissue ablation and reconstruction of atria, extensive (e.g., Maze procedure); without cardiopulmonary bypass	53.43	33.04	\$1,928.27
Mitral Valve Surgery				
33420	Valvotomy mitral valve; closed heart	41.97	25.79	\$1,514.68
33422	Valvotomy mitral valve; open heart, with cardiopulmonary bypass	48.17	29.73	\$1,738.44
33425	Valvuloplasty, mitral valve, with cardiopulmonary bypass	79.16	49.96	\$2,856.85
33426	Valvuloplasty, mitral valve, with cardiopulmonary bypass; with prosthetic ring	69.00	43.28	\$2,490.18
33427	Valvuloplasty, mitral valve, with cardiopulmonary bypass; radical reconstruction, with or without ring	70.77	44.83	\$2,554.06
33430	Replacement, mitral valve, with cardiopulmonary bypass	81.15	50.93	\$2,928.67

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*Atrial appendage ligation, plication, or AtriClip is included in mitral valve and Maze procedures and should not be reported separately when performed in the same session as these procedures.

**Source: American Medical Association. CPT 2020 Professional Edition.

***The facility payment is the physician's professional fee in a facility setting. Average national rates are unadjusted by Geography Practice Cost Index. Payment rates reflect a conversion factor of \$36.0896 (effective first quarter 2020).

*Indicates a secondary add-on procedure code to be listed with primary procedure code.

Table 1. Physician Coding and Reimbursement *continued on next page*

Table 1. Physician Coding and Reimbursement *continued*

CPT*	Description	CY 2020 Total Facility Relative Value Units (RVUs)**	CY 2020 Physician Work RVU	CY 2020 National Payment Rates
Aortic Valve Surgery				
33390	Valvuloplasty, aortic valve, open, with cardiopulmonary bypass; simple (i.e., valvotomy, debridement, debulking, and/or simple commissural resuspension)	55.91	35.00	\$2,017.77
33391	Valvuloplasty, aortic valve, open, with cardiopulmonary bypass; complex (e.g., leaflet extension, leaflet resection, leaflet reconstruction, or annuloplasty)	66.44	41.50	\$2,397.79
33405	Replacement, aortic valve, open, with cardiopulmonary bypass; with prosthetic valve other than homograft or stentless valve	65.76	41.32	\$2,373.25
33406	Replacement, aortic valve, open, with cardiopulmonary bypass with allograft valve (freehand)	83.46	52.68	\$3,012.04
33410	Replacement, aortic valve, open, with cardiopulmonary bypass with stentless tissue valve	73.69	46.41	\$2,659.44
33411	Replacement, aortic valve; with aortic annulus enlargement, noncoronary sinus	97.40	62.07	\$3,515.13
33412	Replacement, aortic valve with transventricular aortic annulus enlargement (Konno procedure)	91.47	57.00	\$3,301.12
33413	Replacement, aortic valve; by translocation of autologous pulmonary valve with allograft replacement of pulmonary valve (Ross procedure)	93.62	59.87	\$3,378.71
CABG				
33533	Coronary artery bypass, using arterial graft(s); single arterial graft	54.19	33.75	\$1,955.70
33534	Coronary artery bypass, using arterial graft(s); 2 arterial grafts	63.68	39.88	\$2,298.19
33535	Coronary artery bypass, using arterial graft(s); 3 arterial grafts	71.02	44.75	\$2,563.08
33536	Coronary artery bypass, using arterial graft(s); 4 or more arterial grafts	76.53	48.43	\$2,761.94
Surgical LAAM and Select Imaging Studies				
33999	Unlisted procedure, cardiac surgery	At payer discretion		
93312.26	Transesophageal echocardiogram; complete	2.30	3.12	\$112.60
*93662.26	Intracardiac echocardiography during therapeutic/diagnostic intervention	2.80	4.08	\$147.25
Electrophysiology Cardiac Ablation, Percutaneous LAAM and Select Imaging Studies				
33340	Percutaneous transcatheter closure of the left atrial appendage with endocardial implant, including fluoroscopy, transseptal puncture, catheter placement, left atrial angiography, left atrial appendage angiography, when performed, and radiological supervision and interpretation	22.93	14.00	\$827.53
33999	Unlisted procedure, cardiac surgery	At payer discretion		
93312.26	Transesophageal echocardiogram; complete	2.30	3.12	\$112.60
*93462	Left heart catheterization by transseptal puncture through intact septum or by transapical puncture	3.73	6.10	\$220.15
*93613	Intracardiac EP 3-dimensional mapping	8.63	5.23	\$311.45
93631.26	Intra-operative epicardial and endocardial pacing and mapping to localize the site of tachycardia or zone of slow conduction for surgical correction	11.44	7.59	\$412.87
93653	Comprehensive electrophysiologic evaluation including insertion and repositioning of multiple electrode catheters with induction or attempted induction of an arrhythmia with right atrial pacing and recording, right ventricular pacing and recording (when necessary), His bundle recording (when necessary) with intracardiac catheter ablation of arrhythmogenic focus; with treatment of supraventricular tachycardia by ablation of fast or slow atrioventricular pathway, accessory atrioventricular connection, cavo-tricuspid isthmus or other single atrial focus or source of atrial re-entry	24.29	14.75	\$876.62
*93655	Intracardiac catheter ablation of a discrete mechanism of arrhythmia which is distinct from the primary ablated mechanism, including repeat diagnostic maneuvers, to treat a spontaneous or induced arrhythmia	12.39	7.50	\$447.15
93656	Comprehensive electrophysiologic evaluation including transseptal catheterizations, insertion and repositioning of multiple electrode catheters with induction or attempted induction of an arrhythmia including left or right atrial pacing/recording when necessary, right ventricular pacing/recording when necessary, and His bundle recording when necessary with intracardiac catheter ablation of atrial fibrillation by pulmonary vein isolation	32.62	19.77	\$1,177.24
*93657	Additional linear or focal intracardiac catheter ablation of the left or right atrium for treatment of atrial fibrillation remaining after completion of pulmonary vein isolation	12.38	7.50	\$446.79
*93662	Intracardiac echocardiography during therapeutic/diagnostic intervention	2.80	4.08	\$147.25

Limited operative ablation: Surgical isolation of triggers of supraventricular dysrhythmias by operative ablation that isolates the pulmonary veins or other anatomically defined triggers in the left or right atrium.

Extensive operative ablation: Services in limited ablation definition and additional ablation of atrial tissue to eliminate supraventricular dysrhythmias. This must include operative ablation that involves either the right atrium, the atrial septum or left atrium in continuity with the atrioventricular annulus.

Table 2. Inpatient Facility Coding and Reimbursement

The site of service depends on the patient's chief complaint, clinical presentation and is solely determined by the admitting physician. The ICD-10-CM (Internal Classification of Disease, Tenth Revision, Clinical Modification) Diagnosis Code(s) and primary ICD-10-PCS procedure code(s) determine the MS-DRG (Medicare Severity Diagnosis Related Group).

MS-DRG*	Description	Weight	Arithmetic mean LOS	CY 2020 Inpatient National Standardized Prospective Payment
Cardiac Surgical Ablation				
228	Other cardiothoracic procedures with MCC	6.28	10.8	\$36,467.64
229	Other cardiothoracic procedures without MCC	4.10	5.5	\$23,813.06
Cardiac Valve				
216	Cardiac valve and other major cardiothoracic procedures with cardiac catheterization with MCC	10.04	16.0	\$58,257.27
217	Cardiac valve and other major cardiothoracic procedures with cardiac catheterization with CC	6.65	9.5	\$38,586.80
218	Cardiac valve and other major cardiothoracic procedures with cardiac catheterization without CC/MCC	5.40	6.9	\$31,334.22
219	Cardiac valve and other major cardiothoracic procedures without cardiac catheterization with MCC	7.84	10.9	\$45,481.44
220	Cardiac valve and other major cardiothoracic procedures without cardiac catheterization with CC	5.30	6.6	\$30,780.22
221	Cardiac valve and other major cardiothoracic procedures without cardiac catheterization without CC/MCC	4.59	4.7	\$26,663.15
CABG				
231	Coronary bypass with PTCA with MCC	8.21	12.0	\$47,635.98
232	Coronary bypass with PTCA without MCC	5.98	8.7	\$34,728.46
233	Coronary bypass with cardiac catheterization with MCC	7.76	12.8	\$45,068.40
234	Coronary bypass with cardiac catheterization without MCC	5.20	8.6	\$30,202.42
235	Coronary bypass without cardiac catheterization with MCC	5.88	9.8	\$34,137.33
236	Coronary bypass without cardiac catheterization without MCC	4.02	6.4	\$23,373.33
Percutaneous Cather Ablation				
273	Percutaneous intracardiac procedures with MCC	3.71	6.2	\$21,523.93
274	Percutaneous intracardiac procedures without MCC	3.15	2.3	\$18,330.41

CC = comorbidity or complication, MCC = major complication or comorbidity, w/o = without, PTCA = percutaneous transluminal coronary angioplasty.
 *Source: FY20 Medicare inpatient rates based upon Final Rule release.

Table 3. Outpatient Hospital and Ambulatory Surgery Center Reimbursement

CPT	Procedure Description	Comprehensive APC*	APC Title	CY 2020 Medicare National Standardized APC Payment (HOPPS)
Percutaneous Catheter Ablation				
93653	Comprehensive electrophysiologic evaluation including insertion and repositioning of multiple electrode catheters with induction or attempted induction of an arrhythmia with right atrial pacing and recording, right ventricular pacing and recording (when necessary), His bundle recording (when necessary) with intracardiac catheter ablation of arrhythmogenic focus; with treatment of supraventricular tachycardia by ablation of fast or slow atrioventricular pathway, accessory atrioventricular connection, cavo-tricuspid isthmus or other single atrial focus or source of atrial re-entry	5213	Level 3 EP Procedure	\$20,433.00
93654	Comprehensive electrophysiologic evaluation including insertion and repositioning of multiple electrode catheters with induction or attempted induction of an arrhythmia with right atrial pacing and recording, right ventricular pacing and recording, His recording with intracardiac catheter ablation of arrhythmogenic focus; with treatment of ventricular tachycardia or focus of ventricular ectopy including intracardiac electrophysiologic 3D mapping, when performed, and left ventricular pacing and recording, when performed			
93656	Comprehensive electrophysiologic evaluation including transeptal catheterizations, insertion and repositioning of multiple electrode catheters with induction or attempted induction of an arrhythmia including left or right atrial pacing/recording when necessary, right ventricular pacing/recording when necessary, and His bundle recording when necessary with intracardiac catheter ablation of atrial fibrillation by pulmonary vein isolation			

CPT codes 93653, 93654, and 93656 are assigned to APC 5213, as these CPT codes include both a diagnostic study and ablation in a single code. These also have a status of J1, and one will typically be the primary code in a case.

*Source: FY20 Medicare outpatient rates based upon Final Rule release.

Peer-Reviewed Evidence

Clinical evidence in support of surgical cardiac ablation and left atrial appendage surgical closure, includes, but is not limited to, the following peer-reviewed publications. Citations are available upon request.

Cardiac surgical ablation with/without concomitant cardiac surgery (CABG, MVR, AVR)

Ad, N. et al. (2012). Surgical ablation of atrial fibrillation trends and outcomes in North America. *J Thorac Cardiovasc Surg*, 144(5):1051-60.

Badhwar, V. et al. (2017). The Society of Thoracic Surgeons 2017 clinical practice guidelines for the surgical treatment of atrial fibrillation. *Ann Thorac Surg*, 103(1):329-41.

Badhwar, V. et al. (2017). Surgical ablation of atrial fibrillation in the United States: Trends and propensity matched outcomes. *Ann Thorac Surg*, 104(2):493-500.

Gillinov, A.M. et al. (2015). Surgical ablation of atrial fibrillation during mitral-valve surgery. *N Engl J Med*, 372(15):1399-409.

Musharbash, F.N. et al. (2018). Performance of the Cox-maze IV procedure is associated with improved long-term survival in patients with atrial fibrillation undergoing cardiac surgery. *J Thorac Cardiovasc Surg*, 155(1):159-170.

Philpott, J.M. et al. (2015). The ABLATE trial: safety and efficacy of Cox Maze-IV using a bipolar radiofrequency ablation system. *Ann Thorac Surg*, 100(5):1541-8.

Rankin, J.S. et al. (2017). One-year mortality and costs associated with surgical ablation for atrial fibrillation concomitant to coronary artery bypass grafting. *Eur J Cardiothorac Surg*, 52(3):471-7.

Concomitant cardiac surgery with either (CABG, MVR, AVR) and surgical left atrial appendage management

Aryana, A. et al. (2015). Association between incomplete surgical ligation of left atrial appendage and stroke and systemic embolization. *Heart Rhythm*, 12(7):1431-7.

Caliskan, E. et al. Epicardial left atrial appendage AtriClip occlusion reduces the incidence of stroke in patients with atrial fibrillation undergoing cardiac surgery. *Europace*, 2018 20(7):e105-e114.

Elbadawi, A. et al. (2017). Impact of left atrial appendage exclusion on cardiovascular outcomes in patients with atrial fibrillation undergoing coronary artery bypass grafting (From the National Inpatient Sample Database). *Am J Cardiol*, 120(6):953-8.

Friedman, D.J. et al. (2018). Association between left atrial appendage occlusion and readmission for thromboembolism among patients with atrial fibrillation undergoing concomitant cardiac surgery. *JAMA*, 233(4):365-74.

Park-Hansen et al. (2018). Adding left atrial appendage closure to open heart surgery provides protection from ischemic brain injury six years after surgery independently of atrial fibrillation history: the LAACS randomized study. *J Cardiothorac Surg*, 23;13(1):53.

Table 4. Common ICD-10 codes used during LAAM, cardiac surgery and EP ablation procedures

ICD-10 CM	Diagnosis Description
I48.0	Paroxysmal atrial fibrillation
I48.1	Persistent atrial fibrillation
I48.2	Chronic atrial fibrillation
I48.3	Typical atrial flutter
I48.4	Atypical atrial flutter
I48.91	Unspecified atrial fibrillation
I48.92	Unspecified atrial flutter
ICD-10 PCS	Procedure Description
02563ZZ	Destruction of right atrium, percutaneous
02564ZZ	Destruction of right atrium, percutaneous endoscopic
02560ZZ	Destruction of right atrium, open
02573ZZ	Destruction of left atrium, percutaneous
02574ZZ	Destruction of left atrium, percutaneous endoscopic
02570ZZ	Destruction of left atrium, open
02583ZZ	Destruction, conduction mechanism, percutaneous
02584ZZ	Destruction, conduction mechanism, percutaneous endoscopic
02580ZZ	Destruction, conduction mechanism, open
025T0ZZ	Destruction of left pulmonary vein, open
025T3ZZ	Destruction of left pulmonary vein, percutaneous
025T4ZZ	Destruction of left pulmonary vein, percutaneous endoscopic
02B70ZZ	Excision of left atrial appendage, open
02B73ZZ	Excision of left atrial appendage, percutaneous
02B74ZZ	Excision of left atrial appendage, percutaneous endoscopic
02L73DK	Occlusion of left atrial appendage with intraluminal device, percutaneous
02L74DK	Occlusion of left atrial appendage with intraluminal device, percutaneous endoscopic
02L73ZK	Occlusion of left atrial appendage, percutaneous
02L74ZK	Occlusion of left atrial appendage, percutaneous endoscopic
02L70CK	Occlusion of left atrial appendage with extraluminal device, open
02L74CK	Occlusion of left atrial appendage with extraluminal device, percutaneous endoscopic

*Source: FY20 AMA ICD-10 PCS codebook

Open approach: An open approach is defined as cutting through the skin or mucous membrane and any other body layers necessary to expose the site of the procedure.

Percutaneous approach: A procedure performed via a percutaneous approach (character value 3) is one in which there is entry, by puncture or minor incision, of instrumentation through the skin or mucous membrane and any other body layers necessary to reach the site of the procedure.

Percutaneous endoscopic approach: Percutaneous endoscopic approach (character value 4) is defined as entry, by puncture or minor incision, of instrumentation through the skin or mucous membrane and any other body layers necessary to reach and visualize the site of the procedure.

For questions and/or additional information, please contact AtriCure's health policy helpline: 1 (888) 347-6403.

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