Reporting Cardiac Ablation (93653, 93654, 93656)

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For the Current Procedural Terminology (CPT®) 2022 code set, codes 93653, 93654, and 93656 have been revised, and new parenthetical notes and a new table have been added to the Cardiovascular subsection of the Medicine section to help when reporting cardiac ablation services. This article provides an overview of these changes.

Intracardiac Electrophysiological Procedures/Studies

93653 Comprehensive electrophysiologic evaluation with insertion and repositioning of multiple electrode catheters, induction or attempted induction of an arrhythmia with right atrial pacing and recording and catheter ablation of arrhythmogenic focus, including intracardiac electrophysiologic 3-dimensional mapping, right ventricular pacing and recording, left atrial pacing and recording from coronary sinus or left atrium, and His bundle recording, when performed; 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

(Do not report 93653 in conjunction with 93600, 93602, 93603, 93610, 93612, 93613, 93618, 93619, 93620, 93621, 93654, 93656)

93654 with treatment of ventricular tachycardia or focus of ventricular ectopy including left ventricular pacing and recording, when performed

(Do not report 93654 in conjunction with 93279-93284, 93286-93289, 93600-93603, 93609, 93610, 93612, 93613, 93618-93620, 93622, 93653, 93656)

93656 Comprehensive electrophysiologic evaluation including transseptal catheterizations, insertion and repositioning of multiple electrode catheters with intracardiac catheter ablation of atrial fibrillation by pulmonary vein isolation, including intracardiac electrophysiologic 3-dimensional mapping, intracardiac echocardiography including imaging supervision and interpretation, induction or attempted induction of an arrhythmia including left or right atrial pacing/recording, right ventricular pacing/recording, and His bundle recording, when performed

(Do not report 93656 in conjunction with 93279, 93280, 93281, 93282, 93283, 93284, 93286, 93287, 93288, 93289, 93462, 93600, 93602, 93603, 93610, 93612, 93613, 93618, 93619, 93620, 93621, 93653, 93654, 93662)

Codes 93653, 93654, and 93656 were identified for revision by the American Medical Association (AMA)/Specialty Society Relative Value Scale (RVS) Update Committee (RUC) Relativity Assessment Workgroup (RAW), after a survey identified an increase in the utilization of code 93656.

A list of revisions related to these codes is as follows:

- Intracardiac electrophysiologic three-dimensional (3D) mapping and left atrial pacing and recording from coronary sinus or left atrium have been bundled into code 93653.
- Intracardiac electrophysiologic 3D mapping, intracardiac echocardiography, including imaging supervision and interpretation, have been bundled into code 93656.
- Codes 93613 and 93621 should not be reported with code 93653.
- Code 93642 has been removed from parenthetical notes and is excluded from being reported with codes 93653 and 93654.
- Codes 93613 and 93662 should not be reported with code 93656.
- The descriptor of code 93653 was revised to include “with treatment of supraventricular tachycardia by ablation of fast or slow atrioventricular pathway.”
- The descriptor of code 93654 was revised to include “with treatment of ventricular tachycardia or focus of ventricular ectopy.”
- The descriptor of code 93656 was revised to include “with treatment of atrial fibrillation by pulmonary vein isolation.”

The following clinical examples and procedural descriptions reflect the typical clinical scenarios for which these revised codes would be appropriately

reported.

Clinical Example (93653)

A 64-year-old female has recurrent palpitations. An event monitor has documented supraventricular tachycardia (SVT). A comprehensive electrophysiologic evaluation with catheter ablation is ordered.

Description of Procedure (93653)

Confirm that direct current cardioversion/defibrillation and electrophysiology (EP) testing/ablation equipment is present and in proper working order. Test fluoroscopic equipment that will be used to visualize catheter movement and location. Administer local analgesia with anesthesia that is appropriate for the patient, including moderate sedation. Obtain venous access. Arterial access to monitor blood pressure and to facilitate retrograde aortic access to the left ventricle may be obtained. Advance the multielectrode catheters from the access sheaths into the respective cardiac chambers where they will be used to pace and record. Perform pacing and sensing in the right atrium, left atrium, and right ventricle. Obtain a recording of the bundle of His and measure the refractory periods. Attempt arrhythmia induction via maneuvers such as burst pacing and premature pacing using programmed electrical stimulation at multiple drive-cycle lengths from multiple atrial and ventricular sites. Once the SVT is induced, perform pacing maneuvers to elucidate the mechanism of the tachycardia. Perform a combination of diagnostic maneuvers and generate a high-definition anatomical map of the chamber(s) of interest. Perform voltage and electrical activation in the arrhythmia and/or in sinus rhythm to identify normal activation, the location of the scar, and the mechanism of the arrhythmia, and then perform catheter ablation. Maneuver the ablation catheter from the sites of vascular access to the appropriate cardiac location to facilitate delivery of ablative energy. Deliver multiple lesions to ensure eradication of the arrhythmia focus and provide consolidation of the lesions* in the surrounding tissue [*Consolidation of lesions means deliver more ablation points.] During the course of the EP procedure, an induced arrhythmia requires the use an advanced 3D computer mapping system to assist in identifying the arrhythmia circuit and localizing the origin (for focal arrhythmias) or the critical isthmus (for reentrant arrhythmias). Calibrate the 3D mapping system and obtain recordings during sinus rhythm (to identify normal activation and location of the scar) and during each distinct arrhythmia. The physician analyzes the computer-generated map to ensure the electrograms are annotated correctly and the display parameters are correct for the specific arrhythmia being mapped. Based on the data from the 3D mapping system, endocardial electrograms, the surface electrocardiogram (ECG), and the response of the SVT to pacing maneuvers, advance the ablation catheter to the point of

earliest activation as localized by the mapping system to identify a mid-diastolic potential, Kent potential, and/or similar paced maps. When a reentrant circuit is identified, perform and evaluate entrainment mapping studies to confirm the catheter location is within the reentrant circuit, and then perform radiofrequency (or cryo) ablation. If initial mapping in one chamber does not lead to complete identification of the essential arrhythmia circuit (either based on analysis of the map or based on an incomplete ablation result), move the mapping catheter(s) into another cardiac chamber and generate an additional 3D map to aid in diagnosis; repeat the procedure until the arrhythmia mechanism is fully characterized and ablation is deemed completely successful. Prepare a final report that includes the mapping procedure and findings.

To record left atrial activity, the femoral venous access site is already prepared for a related procedure. Achieve central venous access and place a sheath in the femoral vein using standard percutaneous techniques, changing to subclavian or jugular access if that fails. Introduce the catheter into the sheath and advance into the right atrium where the ostium of the coronary sinus is engaged. Advance the catheter into the coronary sinus. Use the multielectrode catheter to record electrical activity from the left atrium and, at times, pace the left atrium to attempt arrhythmia induction. Reposition the catheter as necessary throughout the course of the cardiac EP procedure to optimize recordings and pacing thresholds. At the conclusion of the procedure, remove the catheter. Include a description of this additional work and catheter use and associated findings in the procedure report. Throughout the ablation, monitor the patient for hemodynamic compromise due to cardiac perforation or tachyarrhythmias, embolic phenomena, or damage to cardiac or vascular structures. Following the ablation portion of the procedure, perform repeat electrophysiologic testing to assess the outcome of ablation using decremental, burst, and premature pacing maneuvers. Repeat these procedures at the conclusion of a 30-minute waiting period following the final ablation lesion. If the tachycardia demonstrates recovery or incomplete suppression, perform repeat mapping and ablation as described above, and repeat these steps until the tachycardia is rendered durably suppressed. Remove the sheaths, achieve appropriate hemostasis, and perform a follow-up assessment of the patient for any complications.

Clinical Example (93654)

A 73-year-old male, who has a history of New York Heart Association (NYHA) Class III heart failure due to ische-mic dilated cardiomyopathy (ejection fraction [EF] 25%) and prior myocardial infarction (MI), presents with recurrent implantable cardioverter-defibrillator (ICD) therapies for drug-refractory ventricular tachycardia (VT).

Description of Procedure (93654)

Confirm that direct current cardioversion/defibrillation and EP testing/ablation equipment is present and in proper working order. Test the fluoroscopic equipment that will be used to visualize catheter movement and location. Test and confirm that the 3D mapping equipment is functioning normally. Administer local analgesia. For patients with ICDs, reprogram and/or transiently deactivate their devices at the start of the case to minimize adverse consequences resulting from electromagnetic interference from radiofrequency current application. Obtain venous access. Obtain arterial access to monitor BP and to facilitate retrograde aortic access to the left ventricle. Advance the multielectrode catheters from the access sheaths and into the respective cardiac chambers where they will be used to pace and record. Place an intracardiac echocardiography (ICE) probe via a femoral venous access approach. Perform ICE in conjunction with the 3D mapping system to create a 3D shell of the right or left ventricle that includes the aortic root, aortic valve leaflets, coronary sinus, and mitral valve annulus. Also record the papillary muscles in the 3D anatomical ultrasound map. Perform pacing and sensing in the right atrium and right ventricle. Obtain a recording of the bundle of His and measure the refractory periods. Attempt to induce VT via burst pacing, decremental pacing, and premature pacing using programmed electrical stimulation at multiple drive-cycle lengths from multiple ventricular sites.

To record left atrial activity, the femoral venous access site is already prepared for a related procedure. Achieve central venous access and place a sheath in the femoral vein using standard percutaneous techniques, changing to subclavian or jugular access if that fails. Introduce the catheter into the sheath and advance it into the right atrium where the ostium of the coronary sinus is engaged. Advance the catheter into the coronary sinus. Use the multielectrode catheter to record electrical activity from the left atrium and, at times, pace the left atrium to attempt arrhythmia induction. Reposition the catheter as necessary throughout the course of the cardiac EP procedure to optimize recordings and pacing thresholds. At the conclusion of the procedure, remove the catheter. Include a description of this additional work, catheter use, and associated findings in the procedure report. Once an arrhythmia is induced, perform pacing maneuvers to elucidate the mechanism of the VT. When an arrhythmia is induced during the course of the EP procedure, use the 3D computer-mapping system to assist in identifying the arrhythmia circuit and localizing the origin (for focal arrhythmias) or the critical isthmus (for reentrant arrhythmias). Calibrate the 3D-mapping system and obtain recordings during sinus rhythm (to identify normal activation and location of the scar) and during each distinct arrhythmia. The physician analyzes the computer-generated map to ensure the electrograms are annotated correctly and the display parameters are correct for the specific arrhythmia being mapped. Based on the data from the 3D mapping system, endocardial electrograms, the surface electrocardiogram (ECG), and the response of the SVT to pacing maneuvers, advance the ablation catheter to the point of earliest activation as localized by the mapping system to identify a mid-diastolic potential, Kent potential, and/or similar paced maps. When a reentrant circuit is identified, perform and evaluate entrainment mapping studies to confirm the catheter location is within the reentrant circuit, and then perform radiofrequency (or cryo) ablation. If initial mapping in one chamber does not lead to complete identification of the essential arrhythmia circuit (either based on analysis of the map or based on incomplete ablation result), move the mapping catheter(s) into another cardiac chamber and generate an additional 3D map to aid in

diagnosis; repeat the procedure until the arrhythmia mechanism is fully characterized and ablation is deemed completely successful. (Occasional mapping of the epicardial surface of the heart is necessary.) Prepare a final report that includes the mapping procedure and findings.

Next, map the electrical activation sequence with the 3D electroanatomical mapping system and superimpose the activation timing on the 3D echocardiogram previously obtained. Administer anticoagulation once the catheters have been placed on the left side of the heart. Once the VT circuit is localized, move a catheter to the appropriate location or region of abnormal myocardium to deliver ablative energy. Deliver multiple lesions to ensure eradication of the arrhythmia focus and to provide consolidation lesions in the surrounding tissue. Throughout the ablation, monitor the patient for hemodynamic compromise due to cardiac perforation or tachyarrhythmias, embolic phenomena, or damage to cardiac or vascular structures. Following the ablation portion of the procedure, perform repeat electrophysiologic testing to assess the outcome of ablation using decremental, burst, and premature pacing maneuvers. Repeat these procedures at the conclusion of a 30-minute waiting period following the final ablation lesion. If the tachycardia demonstrates recovery or incomplete suppression, perform repeat mapping and ablation as described above, and repeat these steps until the tachycardia is rendered durably suppressed. Once EP testing and ablation are completed, reverse anticoagulation. Remove the sheaths, achieve appropriate hemostasis, and perform a follow-up assessment of the patient for any complications. For patients with ICDs, reprogram their devices to an active configuration, reprogramming rates as necessary to treat any remaining arrhythmias.

Clinical Example (93656)

A 62-year-old male, who has a history of hypertension has recurrent atrial fibrillation, remains symptomatic despite rate and rhythm control with antiarrhythmic drugs. A comprehensive electrophysiologic evaluation with transeptal catheterization and catheter ablation by pulmonary vein isolation for atrial fibrillation is ordered.

Description of Procedure (93656)

Confirm that direct current cardioversion/defibrillation and EP testing/ablation equipment is present and in proper working order. Test the fluoroscopic equipment that will be used to visualize catheter movement and location. Administer local analgesia. Obtain venous access. Arterial access to monitor BP and to facilitate retrograde aortic access to the left ventricle may be obtained. By means of the venous access sites, position the multielectrode catheters

into specific cardiac chambers. Advance an ICE probe into the heart and perform imaging of the heart and pericardium to visualize the right atrium, tricuspid valve, right ventricle, left atrium, aortic valve, left ventricle, pulmonary veins (left upper, left lower, right upper, right lower), pericardium, superior vena cava, and coronary sinus. Use ICE as necessary to guide catheter manipulation, guide transseptal puncture, provide visualization of catheter contact during mapping and ablation, and observe for complications throughout the procedure. Place the ICE catheter into the left atrium or right ventricle for additional imaging planes. Perform one or two transseptal catheterizations to achieve access and facilitate placement of both a circular mapping catheter and an ablation catheter in the left atrium. Administer additional anticoagulation and monitor the level of anticoagulation throughout the procedure, administering additional anticoagulation as needed. Measure conduction intervals and refractory periods and attempt to induce arrhythmia. Obtain a recording of the bundle of His and perform ventricular pacing and sensing. Pass a mapping catheter into the left atrium and assess and record pulmonary vein conduction. Perform selective venography of the pulmonary veins to define anatomy, as necessary. Generate a high-definition 3D anatomical map of the chamber(s) of interest. Perform voltage and relative electrical activation in the arrhythmia and/or sinus as necessary to identify normal activation, the location of the scar, and the mechanism of arrhythmia. In addition, import, segment, and/or register the MRI/CT scan to the 3D map as necessary. Perform high-output pacing to prevent and/or monitor for phrenic nerve damage during ablation. Perform catheter ablation to achieve pulmonary vein isolation. Create point lesions or balloon-administered lesions that encircle the pulmonary vein region guided by anatomical mapping and electrical signals provided by a circular mapping catheter. Pulmonary vein isolation, as meas-ured by the circular mapping catheter as well as loss of tissue voltage and tissue pacing capture, is the measured endpoint.

When an induced arrhythmia requires the use of advanced 3D computer-assisted mapping system to localize the arrhythmia origin during the course of an EP procedure, place the mapping system in the cardiac chamber of interest using standard percutaneous techniques. Calibrate the system and obtain recordings during sinus rhythm to identify normal activation and location of the scar during each distinct tachycardia. Display the computer-generated map, make modifications in the computer parameters and display, and identify the tachycardia origin. Move the ablation catheter to the point of early activation that was localized by the mapping system and identify a mid-diastolic potential, Kent potential, and/or similar paced maps. When a reentrant circuit is identified, perform and evaluate entrainment mapping studies to confirm the catheter location is within the reentrant circuit. Create additional mappings to confirm arrhythmia origin and to study additional arrhythmias at the conclusion of the procedure. Prepare a final report that includes the mapping procedure and findings.

Throughout the ablation, monitor the patient for hemodynamic compromise due to cardiac perforation or tachyarrhythmias, embolic phenomena, thrombus formation, or damage to cardiac or vascular structures. Pay particular attention to lesion delivery within the pulmonary vein or close to the esophagus. Following the ablation portion of the procedure, perform additional electrophysiologic testing to assess the outcome of ablation. Repeat these procedures at the conclusion of a 30-minute waiting period following the final ablation lesion. If the pulmonary veins demonstrate recovery of conduction, perform

repeat mapping and ablation as described above, and repeat these steps until the pulmonary veins are rendered durably isolated. Once EP testing and ablation are completed, reverse anticoagulation. Remove the sheaths, achieve appropriate hemostasis, and perform a follow-up assessment of the patient for any complications.

