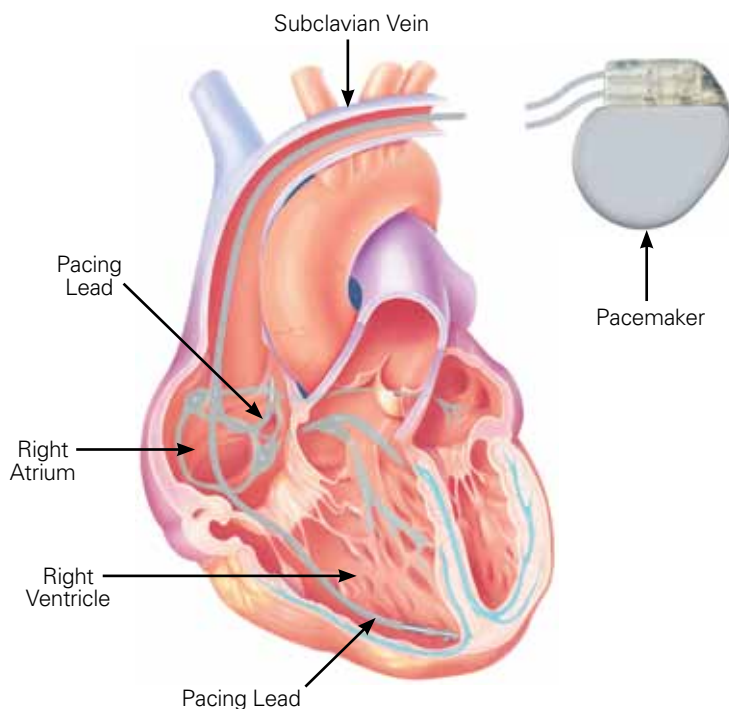


GuidePoint is simplifying reimbursement.

Updated: June 2009

## Pacemaker Coding Overview



### Pacemaker implantation procedure

The implantation of a permanent pacemaker system requires the use of a pacemaker pulse generator and one electrode or lead for a single-chamber system, or two electrodes or leads for a dual-chamber system. The leads monitor and deliver electrical stimulation to the right atrium or right ventricle for a single-chamber system, or both the right atrium and the right ventricle for a dual-chamber system. The lead(s) are inserted through the subclavian vein and are positioned in the right atrium and/or right ventricle. In some cases, the cephalic or internal jugular vein may be used as an alternative to the subclavian vein.

### A step-by-step description of a typical initial pacemaker system implantation procedure

1. The subclavian vein is accessed and a pulse generator pocket is formed.
2. Under **fluoroscopy (71090)**, the **pacing lead(s)** are inserted into the **right atrium (33206) or right ventricle (33207)** for a **single-chamber** system, or into the right atrium **and** right ventricle for a **dual-chamber system (33208)**.
3. **Lead measurement tests**, including pacing and sensing thresholds and lead impedances, are performed.
4. The **pacemaker pulse generator (included in 33206, 33207, and 33208)** is connected to the lead(s) that are in place.
5. Additional **testing of the lead(s)** is completed.
6. The lead(s) and device are secured and the pulse generator pocket is closed.

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# Commonly Billed Pacemaker Procedures

## Key

- Moderate sedation. (For these procedures, moderate [conscious] sedation is included and cannot be billed separately when provided by the same physician. See *AMA Current Procedural Terminology 2009* for specific guidelines.)

## Initial dual-chamber pacemaker system implantation, with fluoroscopy

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b>37.83 Initial insertion of dual chamber device</b></p> <p>Atrial ventricular sequential device</p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Replacement of existing pacemaker device (37.85–37.87)</li> </ul> <p><b>37.72 Initial insertion of transvenous leads [electrodes] into atrium and ventricle</b></p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Insertion of temporary transvenous pacemaker system (37.78)</li> <li>• Replacement of atrial and/or ventricular lead(s) (37.76)</li> </ul> <p><b>87.49 Other chest X-ray</b></p> <p>X-ray of:</p> <ul style="list-style-type: none"> <li>• Bronchus NOS</li> <li>• Diaphragm NOS</li> <li>• Heart NOS</li> <li>• Mediastinum NOS</li> <li>• Lung NOS</li> <li>• Trachea NOS</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33208</b> Insertion or replacement of permanent pacemaker with transvenous electrodes; atrial and ventricular</li> </ul> <p><b>71090</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>	<ul style="list-style-type: none"> <li>• <b>33208</b> Insertion or replacement of permanent pacemaker with transvenous electrodes; atrial and ventricular</li> </ul> <p><b>71090-26**</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>

**Initial single-chamber rate-responsive pacemaker system implant with right atrial lead, with fluoroscopy**

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b>37.73 Initial insertion of transvenous lead [electrode] into atrium</b></p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Insertion of temporary transvenous pacemaker system (37.78)</li> <li>• Replacement of atrial and/or ventricular lead(s) (37.76)</li> </ul> <p><b>37.82 Initial insertion of single-chamber device, rate responsive</b></p> <p>Rate responsive to physiologic stimuli other than atrial rate</p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Replacement of existing pacemaker device (37.85–37.87)</li> </ul> <p><b>87.49 Other chest X-ray</b></p> <p>X-ray of:</p> <ul style="list-style-type: none"> <li>• Bronchus NOS</li> <li>• Diaphragm NOS</li> <li>• Heart NOS</li> <li>• Mediastinum NOS</li> <li>• Lung NOS</li> <li>• Trachea NOS</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33206</b> Insertion or replacement of permanent pacemaker with transvenous electrode; atrial</li> </ul> <p><b>71090</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>	<ul style="list-style-type: none"> <li>• <b>33206</b> Insertion or replacement of permanent pacemaker with transvenous electrode; atrial</li> </ul> <p><b>71090-26**</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>

• Moderate sedation

## Upgrade from single-chamber ventricular electrode pacemaker to dual-chamber pacemaker with addition of right atrial electrode, with fluoroscopy

Hospital Inpatient ICD-9-CM Codes <sup>1</sup>	Hospital Outpatient* CPT® Codes <sup>2,3</sup>	Physician* CPT® Codes <sup>2,3</sup>
<p><b>37.87 Replacement of any type pacemaker device with dual-chamber device</b></p> <p>Atrial ventricular sequential device</p> <p><b>37.73 Initial insertion of transvenous lead [electrode] into atrium</b></p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Insertion of temporary transvenous pacemaker system (37.78)</li> <li>• Replacement of atrial and/or ventricular lead(s) (37.76)</li> </ul> <p><b>87.49 Other chest X-ray</b></p> <p>X-ray of:</p> <ul style="list-style-type: none"> <li>• Bronchus NOS</li> <li>• Mediastinum NOS</li> <li>• Diaphragm NOS</li> <li>• Lung NOS</li> <li>• Heart NOS</li> <li>• Trachea NOS</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33214</b> Upgrade of implanted pacemaker system, conversion of single-chamber system to dual-chamber system (includes removal of previously placed pulse generator, testing of existing lead, insertion of new lead, insertion of new pulse generator)</li> <li><b>71090</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33214</b> Upgrade of implanted pacemaker system, conversion of single-chamber system to dual-chamber system (includes removal of previously placed pulse generator, testing of existing lead, insertion of new lead, insertion of new pulse generator)</li> <li><b>71090-26**</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</li> </ul>

## Removal and replacement of single-chamber rate-responsive pulse generator

Hospital Inpatient ICD-9-CM Codes <sup>1</sup>	Hospital Outpatient* CPT® Codes <sup>2,3</sup>	Physician* CPT® Codes <sup>2,3</sup>
<p><b>37.86 Replacement of any type pacemaker device with single-chamber device, rate responsive</b></p> <p>Rate responsive to physiologic stimuli other than atrial rate</p>	<ul style="list-style-type: none"> <li>• <b>33212</b> Insertion or replacement of pacemaker pulse generator only; single-chamber, atrial or ventricular</li> <li>• <b>33233</b> Removal of permanent pacemaker pulse generator</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33212</b> Insertion or replacement of pacemaker pulse generator only; single-chamber, atrial or ventricular</li> <li>• <b>33233-51**</b> Removal of permanent pacemaker pulse generator</li> </ul>

• Moderate sedation

## Replacement of dual-chamber pulse generator

Hospital Inpatient ICD-9-CM Codes <sup>1</sup>	Hospital Outpatient* CPT® Codes <sup>2,3</sup>	Physician* CPT® Codes <sup>2,3</sup>
<p><b>37.87 Replacement of any type pacemaker device with dual-chamber device</b></p> <p>Atrial ventricular sequential device</p>	<ul style="list-style-type: none"> <li>• <b>33213</b> Insertion or replacement of pacemaker pulse generator only; dual-chamber</li> <li>• <b>33233</b> Removal of permanent pacemaker pulse generator</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33213</b> Insertion or replacement of pacemaker pulse generator only; dual-chamber</li> <li>• <b>33233-51**</b> Removal of permanent pacemaker pulse generator</li> </ul>

## Single lead extraction

Hospital Inpatient ICD-9-CM Codes <sup>1</sup>	Hospital Outpatient* CPT® Codes <sup>2,3</sup>	Physician* CPT® Codes <sup>2,3</sup>
<p><b>37.77 Removal of lead(s) [electrode] without replacement</b></p> <p><b>Removal:</b></p> <ul style="list-style-type: none"> <li>• Epicardial lead (transthoracic approach)</li> <li>• Transvenous lead(s)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33234</b> Removal of transvenous pacemaker electrode(s); single lead system, atrial or ventricular</li> <li><b>71090</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33234</b> Removal of transvenous pacemaker electrode(s); single lead system, atrial or ventricular</li> <li><b>71090</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</li> </ul>

• Moderate sedation

## Insertion of one transvenous pacing electrode

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p>ICD-9-CM procedural coding specifies lead placement into atrium or ventricle:</p> <p><b>37.71 Initial insertion of transvenous lead [electrode] into ventricle</b></p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Insertion of temporary transvenous pacemaker system (37.78)</li> <li>• Replacement of atrial and/or ventricular lead(s) (37.76)</li> </ul> <p>– or –</p> <p><b>37.73 Initial insertion of transvenous lead [electrode] into atrium</b></p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Insertion of temporary transvenous pacemaker system (37.78)</li> <li>• Replacement of atrial and/or ventricular lead(s) (37.76)</li> </ul> <p><b>87.49 Other chest X-ray</b></p> <p>X-ray of:</p> <ul style="list-style-type: none"> <li>• Bronchus NOS</li> <li>• Mediastinum NOS</li> <li>• Diaphragm NOS</li> <li>• Lung NOS</li> <li>• Heart NOS</li> <li>• Trachea NOS</li> </ul>	<ul style="list-style-type: none"> <li>• <b>33216</b> Insertion of a transvenous electrode; single-chamber (one electrode) permanent pacemaker or single-chamber pacing cardioverter defibrillator</li> </ul> <p><b>71090</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>	<ul style="list-style-type: none"> <li>• <b>33216</b> Insertion of a transvenous electrode; single-chamber (one electrode) permanent pacemaker or single-chamber pacing cardioverter defibrillator</li> </ul> <p><b>71090-26**</b> Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>

• Moderate sedation

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## Insertion of two transvenous pacing electrodes

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b>37.72 Initial insertion of transvenous leads [electrodes] into atrium and ventricle</b></p> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Insertion of temporary transvenous pacemaker system (37.78)</li> <li>• Replacement of atrial and/or ventricular lead(s) (37.76)</li> </ul> <p><b>87.49 Other chest X-ray</b></p> <p>X-ray of:</p> <ul style="list-style-type: none"> <li>• Bronchus NOS</li> <li>• Diaphragm NOS</li> <li>• Heart NOS</li> <li>• Mediastinum NOS</li> <li>• Lung NOS</li> <li>• Trachea NOS</li> </ul>	<p>• <b>33217</b></p> <p>Insertion of a transvenous electrode; dual-chamber (two electrodes) permanent pacemaker or dual-chamber pacing cardioverter defibrillator</p> <p><b>71090</b></p> <p>Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>	<p>• <b>33217</b></p> <p>Insertion of a transvenous electrode; dual-chamber (two electrodes) permanent pacemaker or dual-chamber pacing cardioverter defibrillator</p> <p><b>71090-26**</b></p> <p>Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>

## Repositioning of right atrial or right ventricular electrode

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b>37.75 Revision of lead [electrode]</b></p> <ul style="list-style-type: none"> <li>• Repair of electrode [removal with re-insertion]</li> <li>• Repositioning of lead(s) (AICD) (cardiac device) (CRT-D) (CRT-P) (defibrillator) (pacemaker) (pacing) (sensing) [electrode]</li> <li>• Revision of lead NOS</li> </ul> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>• Repositioning of temporary transvenous pacemaker system – omit code</li> </ul> <p><b>87.49 Other chest X-ray</b></p> <p>X-ray of:</p> <ul style="list-style-type: none"> <li>• Bronchus NOS</li> <li>• Diaphragm NOS</li> <li>• Heart NOS</li> <li>• Mediastinum NOS</li> <li>• Lung NOS</li> <li>• Trachea NOS</li> </ul>	<p><b>33215</b></p> <p>Repositioning of previously implanted transvenous pacemaker or pacing cardioverter defibrillator (right atrial or right ventricular) electrode</p> <p><b>71090</b></p> <p>Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>	<p><b>33215</b></p> <p>Repositioning of previously implanted transvenous pacemaker or pacing cardioverter defibrillator (right atrial or right ventricular) electrode</p> <p><b>71090-26**</b></p> <p>Insertion pacemaker, fluoroscopy and radiography, radiological supervision and interpretation</p>

• Moderate sedation

## Single-chamber pacemaker follow-up (in person)

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b>89.45 Artificial pacemaker rate check</b></p> <ul style="list-style-type: none"> <li>Artificial pacemaker function check NOS</li> <li>Bedside device check of pacemaker or cardiac resynchronization pacemaker [CRT-P]</li> <li>Interrogation only without arrhythmia induction</li> </ul> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>Catheter based invasive electrophysiologic testing (37.26)</li> <li>Non-invasive programmed electrical stimulation [NIPS] (arrhythmia induction) (37.20)</li> </ul>	<p><b>93288</b> Interrogation device evaluation (in person) with physician analysis, review and report, includes connection, recording and disconnection per patient encounter; single, dual, or multiple lead pacemaker system</p> <p><b>OR</b></p> <p><b>93279</b> Programming device evaluation with iterative adjustment of the implantable device to test the function of the device and select optimal permanent programmed values with physician analysis, review and report; single lead pacemaker system</p>	<p><b>93288</b> Interrogation device evaluation (in person) with physician analysis, review and report, includes connection, recording and disconnection per patient encounter; single, dual, or multiple lead pacemaker system</p> <p><b>OR</b></p> <p><b>93279</b> Programming device evaluation with iterative adjustment of the implantable device to test the function of the device and select optimal permanent programmed values with physician analysis, review and report; single lead pacemaker system</p>

## Dual-chamber pacemaker follow-up (in person)

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b>89.45 Artificial pacemaker rate check</b></p> <ul style="list-style-type: none"> <li>Artificial pacemaker function check NOS</li> <li>Bedside device check of pacemaker or cardiac resynchronization pacemaker [CRT-P]</li> <li>Interrogation only without arrhythmia induction</li> </ul> <p><b>Excludes:</b></p> <ul style="list-style-type: none"> <li>Catheter based invasive electrophysiologic testing (37.26)</li> <li>Non-invasive programmed electrical stimulation [NIPS] (arrhythmia induction) (37.20)</li> </ul>	<p><b>93288</b> Interrogation device evaluation (in person) with physician analysis, review and report, includes connection, recording and disconnection per patient encounter; single, dual, or multiple lead pacemaker system.</p> <p><b>OR</b></p> <p><b>93280</b> Programming device evaluation with iterative adjustment of the implantable device to test the function of the device and select optimal permanent programmed values with physician analysis, review and report; dual lead pacemaker system</p>	<p><b>93288</b> Interrogation device evaluation (in person) with physician analysis, review and report, includes connection, recording and disconnection per patient encounter; single, dual, or multiple lead pacemaker system.</p> <p><b>OR</b></p> <p><b>93280</b> Programming device evaluation with iterative adjustment of the implantable device to test the function of the device and select optimal permanent programmed values with physician analysis, review and report; dual lead pacemaker system</p>

## Single-, dual-, or multi-chamber pacemaker interrogation (remote)

<b>Hospital Inpatient</b> ICD-9-CM Codes <sup>1</sup>	<b>Hospital Outpatient*</b> CPT® Codes <sup>2,3</sup>	<b>Physician*</b> CPT® Codes <sup>2,3</sup>
<p><b><i>Not Applicable; inappropriate site of service for this scenario.</i></b></p>	<p><b>93294</b>                      Interrogation device evaluation(s) (remote), up to 90 days; single, dual, or multiple lead pacemaker system with interim physician analysis, review(s) and report(s)</p> <p><b>AND (if applicable)</b></p> <p><b>93296</b>                      Interrogation device evaluation(s) (remote), up to 90 days; single, dual, or multiple lead pacemaker system or implantable cardioverter defibrillator system, remote data acquisition(s), receipt of transmissions and technician review, technical support and distribution of results</p>	<p><b>93294</b>                      Interrogation device evaluation(s) (remote), up to 90 days; single, dual, or multiple lead pacemaker system with interim physician analysis, review(s) and report(s)</p> <p><b>AND (if applicable)</b></p> <p><b>93296</b>                      Interrogation device evaluation(s) (remote), up to 90 days; single, dual, or multiple lead pacemaker system or implantable cardioverter defibrillator system, remote data acquisition(s), receipt of transmissions and technician review, technical support and distribution of results</p>

<sup>1</sup> Ingenix. Updatable 2009 ICD-9-CM Expert for Hospitals, Volumes 1, 2 and 3. 6th Revision. Salt Lake City, UT: 2008

<sup>2</sup> Heart Rhythm Society. CPT Coding Guide for Heart Rhythm Procedures and Services, 2008. Washington D.C.: 2008.

<sup>3</sup> American Medical Association. Current Procedural Terminology (CPT) 2009. Professional Edition. Chicago, IL: 2008. Current Procedural Terminology (CPT) is copyright 2008 American Medical Association (AMA). All Rights Reserved. No fee schedules, basic units, relative values, or related listings are included in CPT. The AMA assumes no liability for the data contained herein. Applicable FARS/DFARS restrictions apply to government use. CPT is a registered trademark of the American Medical Association.

\* As of January 1, 2005, the Centers for Medicare and Medicaid Services (CMS) requires hospitals to report all device category codes (C-codes) on Medicare outpatient claims when medical devices are used in conjunction with procedure(s) billed. If C-codes are not identified on submitted Medicare outpatient claims, the claim(s) will be returned to the hospital for correction. Find C-codes for CRM devices at <http://www.bostonscientific.com/crm/reimbursement>. Also find C-codes for CRM devices and related accessories (e.g., introducers, catheters, sheaths) at <http://www.cms.hhs.gov/transmittals/downloads/A03076.pdf> and [http://www.cms.hhs.gov/HospitalOutpatientPPS/04\\_passthrough\\_payment.asp](http://www.cms.hhs.gov/HospitalOutpatientPPS/04_passthrough_payment.asp).

\*\* Modifiers 26 (professional component) and 51 (multiple procedures) are for physician billing only. See the *AMA Current Procedural Terminology 2009* for complete descriptions. Historically, third-party payers have used –51 modifier in various ways that may affect payment. Always verify appropriate usage with payers.

**Note:** *The CPT coding scenarios in this document are from the Heart Rhythm Society's (HRS) CPT coding guide. The ICD-9-CM scenarios are not from the HRS coding guide. However, they were formulated using 2009 ICD-9-CM terminology and following Medicare coding guidelines.*

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#### Cardiac Rhythm Management

Boston Scientific Corporation  
4100 Hamline Avenue North  
St. Paul, MN 55112-5798 USA  
Tel: 651.582.4000 Fax: 651.582.4166  
Medical Professionals:  
1.800.CARDIAC (227.3422)  
Patients and Families:  
1.866.484.3268

[www.bostonscientific.com](http://www.bostonscientific.com)

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