

Policy #: 101

Original policy date: 6/1/09

Page: 1 of 4

Title:

Biventricular Pacemakers for the Treatment of Congestive Heart Failure

Description

It is estimated that 20-30% of patients with congestive heart failure (CHF) have intraventricular conduction disorders resulting in an uncoordinated contraction pattern and a wide QRS interval on the electrocardiogram (EKG). This abnormality is associated with increased morbidity and mortality.

A biventricular pacemaker, also known as CRT (cardiac resynchronization therapy) is a type of pacemaker that can pace both the septal and lateral walls of the left ventricle. By pacing both sides of the left ventricle, the pacemaker can resynchronize a heart whose opposing walls do not contract in synchrony, which occurs in approximately 25-50 % of heart failure patients.

CRT devices have at least two leads, one in the right ventricle to stimulate the septum, and another inserted through the coronary sinus to pace the lateral wall of the left ventricle. Biventricular pacemakers using three leads (1 in the right atrium and 1 in each ventricle) are used as a technique to coordinate the contraction of the ventricles, thus improving patients' hemodynamic (blood movement) status.

This document addresses biventricular cardiac pacing to deliver cardiac resynchronization therapy (CRT) to alleviate the symptoms of moderate to severe congestive heart failure associated with left ventricular dyssynchrony (lack of rhythm in the ventricles). It also addresses a hybrid device that combines CRT with an implantable cardioverter defibrillator (ICD). In the combined device (CRT/ICD), the CRT component promotes coordinated contraction of both ventricles, while the ICD portion detects dangerous arrhythmias and shocks the heart back into normal rhythm.

When services are covered for commercial products and Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFES PlusRx

We cover biventricular pacemakers with or without an accompanying implantable cardiac defibrillator (i.e., a combined biventricular pacemaker/ICD) as a treatment of congestive heart failure in patients who meet all of the following criteria:¹

- NYHA (New York Heart Association) Class III or IV (heart failure)
- Left ventricular ejection fraction $\leq 35\%$ (50-60 normal range)
- QRS duration of $\geq 120-130^*$ msec (wide QRS interval)
- Patients treated with a stable pharmacological medical regimen prior to implant, such as an ACE inhibitor (or an angiotensin receptor blocker) and a beta blocker (or angiotensin receptor blocker), digoxin, and/or diuretics.

The FDA-labeled indication for the InSync device is limited to patients with a QRS duration of >130 msec, while the FDA-labeled indication for the CONTAK CD® CRT-D System is limited to patients with a QRS >120 msec.¹

When services are not covered for commercial products and Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx.

We do not cover an intrathoracic fluid monitoring sensor as a component of a biventricular pacemaker because it is considered investigational.¹

Individual consideration

All our medical policies are written for the majority of people with a given condition. Each policy is based on medical science. For many of our medical policies, each individual's unique clinical circumstances may be considered in light of current scientific literature. For consideration of an individual patient, physicians may send relevant clinical information to:

For services already billed

Blue Cross Blue Shield of Massachusetts
Provider Appeals
P. O. Box 986065
Boston, MA 02298

Prior to performance of service

Blue Cross Blue Shield of Massachusetts
Case Creation/Medical Policy
One Enterprise Drive
Quincy, MA 02171
Tel: 1-800-327-6716
Fax: 1-888-641-5330

Managed care guidelines

- **For Medicare HMO Blue members:** Referrals are required for all visits to a specialist.
- For all other Managed Care plans, any specialist visit requires a referral, except for visits performed by OB/GYN specialists.
- Authorization is required for an inpatient admission.

Indemnity and PPO guidelines

All authorization requirements are determined by the individual's subscriber certificate, however:

- Authorization is required for an inpatient admission.
- Authorizations are not required for most outpatient services as determined by the individual's subscriber certificate.
- Referrals to a specialist are not required.

Coding information

Procedure codes are from current CPT, HCPCS Level II, Revenue Code, and/or ICD-9-CM manuals, as recommended by the American Medical Association, Centers for Medicare and Medicaid Services and American Hospital Associations. Blue Cross Blue Shield Association national codes may be developed when appropriate.

The following codes are included below for informational purposes. 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.

CPT codes:

- **33211** - Insertion or replacement of temporary transvenous dual chamber pacing electrodes (separate procedure)
- **33213** - Insertion or replacement of pacemaker pulse generator only; dual chamber
- **33224** - Insertion of pacing electrode, cardiac venous system, for ventricular pacing, with attachment to previously placed pacemaker or pacing cardioverter-defibrillator pulse generator (including revision of pocket, removal, insertion and/or replacement of generator)

- **33225** - Insertion of pacing electrode, cardiac venous system, for left ventricular pacing, at time of insertion of pacing cardioverter-defibrillator or pacemaker pulse generator, (including upgrade to dual chamber system) (list separately in addition to code for primary procedures)

Thus, CPT describes 33225 as an “add-on” code to other pacing or pacing cardioverter-defibrillator procedures.

Policy update history

New policy, effective 6/09.

Footnotes

¹ Based upon BCBSA policy #2.02.10, Biventricular Pacemakers for the Treatment of Congestive Heart Failure, issued 2/2009.

References

References from footnote 1:

1. Hunt SA; American College of Cardiology; American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure). ACC/AHA 2005 guideline update for the diagnosis and management of chronic heart failure in the adult: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure). *J Am Coll Cardiol* 2005; 46(6):e1-e82.
2. McAlister FA, Ezekowitz JA, Wiebe N et al. Systematic review: cardiac resynchronization in patients with symptomatic heart failure. *Ann Intern Med* 2004; 141(5):381-90.
3. Hawkins NM, Petrie MC, MacDonald MR et al. Selecting patients for cardiac resynchronization therapy: electrical or mechanical dyssynchrony? *Eur Heart J* 2006; 27(11):1270-81.
4. Strickberger SA, Conti J, Daoud EG et al. Patient selection for cardiac resynchronization therapy: from the Council on Clinical Cardiology Subcommittee on Electrocardiography and Arrhythmias and the Quality of Care and Outcomes Research Interdisciplinary Working Group, in Collaboration with the Heart Rhythm Society. *Circulation* 2005; 111(16):2146-50.
5. Gasparini M, Auricchio A, Regoli F et al. Four-year efficacy of cardiac resynchronization therapy on exercise tolerance and disease progression: the importance of performing atrioventricular junction ablation in patients with atrial fibrillation. *J Am Coll Cardiol* 2006; 48(4):734-43.
6. Landolina M, Lunati M, Gasparini M et al. Comparison of the effects of cardiac resynchronization therapy in patients with class II versus class III and IV heart failure (from the InSync/InSync ICD Italian Registry). *Am J Cardiol* 2007; 100(6):1007-12.
7. Beshai JF, Grimm RA, Nagueh SF et al. Cardiac-resynchronization therapy in heart failure with narrow QRS complexes. *N Engl J Med* 2007; 357(24): 2461-71.
8. Yu CM, Abraham WT, Bax J et al. Predictors of response to cardiac resynchronization therapy (PROSPECT)--study design. *Am Heart J* 2005; 149(4):600-5.
9. Bleeker GB, Schalij MJ, Boersma E et al. Relative merits of M-mode echocardiography and tissue Doppler imaging for prediction of response to cardiac resynchronization therapy in patients with heart failure secondary to ischemic or idiopathic dilated cardiomyopathy. *Am J Cardiol* 2007; 99(1):68-74.
10. Sassone B, Capecchi A, Boggian G et al. Value of baseline left lateral wall postsystolic displacement assessed by M-mode to predict reverse remodeling by cardiac resynchronization therapy. *Am J Cardiol* 2007; 100(3):470-5.
11. Gorcsan J 3rd, Abraham T, Agler DA et al. Echocardiography for cardiac resynchronization therapy: recommendations for performance and reporting--a report from the American Society of Echocardiography Dyssynchrony Writing Group endorsed by the Heart Rhythm Society. *J Am Soc Echocardiogr* 2008; 21(3):191-213.
12. Achilli A, Sassara M, Pontillo D et al. Effectiveness of cardiac resynchronisation therapy in patients with echocardiographic evidence of mechanical dyssynchrony. *J Cardiovasc Med (Hagerstown)* 2008; 9(2):131-6.

13. Leclercq C, Gadler F, Kranig W et al. A randomized comparison of triple-site versus dual-site ventricular stimulation in patients with congestive heart failure. *J Am Coll Cardiol* 2008; 51(15):1455-62.
14. Foreman B, Fishel RS, Odryzynski NI et al. Intra-thoracic impedance: A surrogate measure of thoracic fluid – Fluid Accumulation Status Trial (FAST). *J Card Fail* 2004; 10(suppl):abstract 251.
15. Yu CM, Wang L, Stadler R et al. Impedance based prediction of CHF admission precedes symptoms in heart failure patients. *Pacing Clin Electrophysiol* 2004; 1(suppl):S213.
16. Ypenburg C, Bax JJ, van der Wall EE et al. Intrathoracic impedance monitoring to predict decompensated heart failure. *Am J Cardiol* 2007; 99(4):554-7.
17. Whellan DJ, O'Connor CM, Ousdigian KT et al. Rationale, design, and baseline characteristics of a Program to Assess and Review Trending INformation and Evaluate CorRelation to Symptoms in Patients with Heart Failure (PARTNERS HF). *Am Heart J* 2008; 156(5):833-9.
18. Perego GB, Landolina M, Vergara G et al. Implantable CRT device diagnostics identify patients with increased risk for heart failure hospitalization. *J Interv Card Electrophysiol* 2008; 23(3):235-42.

This document is designed for informational purposes only and is not an authorization, or an explanation of benefits, or a contract. Receipt of benefits is subject to satisfaction of all terms and conditions of the coverage. Medical technology is constantly changing, and we reserve the right to review and update our policies periodically.

©2009 Blue Cross and Blue Shield of Massachusetts, Inc. All rights reserved. Blue Cross and Blue Shield of Massachusetts, Inc. is an Independent Licensee of the Blue Cross and Blue Shield Association.