

Evidence Based Guideline

Biventricular Pacemakers for CHF

File Name: biventricular_pacemakers_for_CHF
Guideline Number: EBG.SUR6075
Origination: 10/2000
Last Review: 3/2008
Next Review: 3/2010

Description of Procedure or Service

Congestive Heart Failure (CHF) is a clinical condition where the heart is unable to generate a cardiac output sufficient to meet the body's circulatory demands. Approximately 20%-30% of patients with CHF have intraventricular conduction disorders resulting in a disorganized contraction pattern and a wide QRS interval on the electrocardiogram (EKG). This abnormality appears to be associated with increased morbidity and mortality. Biventricular pacemakers are intended to coordinate the contraction of the ventricles of the heart.

Two strategies are being explored; incorporating biventricular pacing into automatic implantable cardiac defibrillators; and the development of stand alone biventricular pacemakers.

Evidence Based Guideline for Biventricular Pacemakers for CHF

- A. FDA approved biventricular pacemakers may be appropriate as a treatment of CHF in patients who meet **all** the following criteria:
1. [New York Heart Association \(NYHA\)](#) Class III or IV; **and**,
 2. Left ventricular ejection fraction less than or equal to 35%; **and**,
 3. QRS duration of greater than or equal 120 msec; **and**,
 4. Patients have been treated with a stable pharmacological medical regimen prior to implant, including an ACE inhibitor (or an angiotensin receptor blocker) and a beta blocker (or angiotensin receptor blocker), digoxin and/or diuretics.
- B. [New York Heart Association \(NYHA\)](#) Class II patients with a pacemaker and who meet criteria 2 through 4 above may be appropriate for biventricular pacemakers rather than standard pacemakers if they require a routine pacemaker replacement.

Medical Evidence regarding Biventricular Pacemakers for CHF indicates it is not recommended in the following situations:

Biventricular pacemakers are not recommended as a treatment of CHF in patients who do not meet the criteria noted above.

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Benefits Application

Please refer to certificate for availability of benefit. This guideline relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore certificate language should be reviewed before applying the terms of the policy.

Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 33211, 33213, 33224, 33225, 33226

Medical Term Definitions

New York Heart Association (NYHA) Functional Classification

Class I	Ordinary physical activity does not cause symptoms
Class II	Comfortable at rest, ordinary physical activity causes symptoms
Class III	Comfortable at rest, less than ordinary activity causes symptoms
Class IV	Symptoms at rest

Scientific Background and Reference Sources

BCBSNA Medical Policy Reference Manual, 2.02.10, 7/16/99

Specialty Matched Consultant Advisory Panel - 9/00

Medical Policy Advisory Group - 10/00

BCBSA Medical Policy Reference Manual, 2.02.10, 11/20/01

Specialty Matched Consultant Advisory Panel - 8/2002

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.02.10, 12/17/03

Dixon J, Horn E, Neglia J, Medina N, Garan H. (2004 February). Loss of left bundle branch block following biventricular pacing therapy for heart failure: evidence for electrical remodeling? *J Interv Card Electrophysiol*, 10(1), 47-50. Retrieved April 16, 2004 from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=14739749.

Conaway DG, Sullivan R, McCulloch Pa. (2004 Winter). Improved symptoms, physical limitation, and self-efficacy after resynchronization in a patient with heart failure and a prolonged QRS duration. *Rev Cardiovasc Med*, 5(1), 53-57. Retrieved April 16, 2004 from http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15029112.

Specialty Matched Consultant Advisory Panel - 6/2004

California Technology Assessment Forum (2004, October 20) Cardiac resynchronization therapy for the

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treatment of heart failure. Retrieved December 19, 2005 from http://www.ctaf.org/content/assessments_pdf/32362336383_Cardiac_Resynch_final.pdf

Agency for Healthcare Research and Quality (AHRQ) Evidence Report/Technology Assessment Number 106. (2004, November) Cardiac resynchronization therapy for congestive heart failure. Retrieved November 15, 2005 from <http://www.ahrq.gov/downloads/pub/evidence/pdf/resynch/resynchf.pdf>

Cleland JG, Daubert JC, Erdmann E, et al. (2005, April 14). The effect of cardiac resynchronization on morbidity and mortality in heart failure. *N Engl J Med*, 352(15):1539-49.

Institute for Clinical Systems Improvement (ICSI). Implantable Cardioverter-Defibrillators for the Primary Prevention of Sudden Cardiac Death due to Ventricular Arrhythmias. Technology Assessment #89. Bloomington, MN: Institute for Clinical Systems Improvement (ICSI); March 2005. Retrieved 10/12/07 from <http://www.icsi.org/knowledge/detail.asp?catID=107&itemID=2149>

Centers for Medicare and Medicaid Services. Local Coverage Determination for Resynchronization Therapy for Congestive Heart Failure (Bi-Ventricular Pacing) (L11585). Retrieved 10/12/07 from http://www.cms.hhs.gov/mcd/viewlcd.asp?lcd_id=11585&lcd_version=14&show=all

National Institute for Clinical Excellence (NICE). Cardiac resynchronisation therapy for the treatment of heart failure. NICE technology appraisal guidance 120. London, UK: NICE; May 2007. Retrieved 10/12/07 from <http://guidance.nice.org.uk/TA120/niceguidance/pdf/English/download.dsp>

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.02.10, 10/10/06

Policy Implementation/Update Information

- 9/00 Specialty Matched Consultant Advisory Panel
- 10/00 Original policy issued. Medical Policy Advisory Group - Approved.
- 3/02 Policy statement changed from investigational to include eligible indications for coverage.
- 9/02 Specialty Matched Consultant Advisory Panel review. Clarified the "When Biventricular Pacemakers for CHF are covered" section.
- 1/03 Statement added to Billing/Coding Section indicating that Medical Records may be ordered.
- 8/03 Added codes 33224 and 33225 to policy.
- 1/04 Benefits Application and Billing/Coding sections updated for consistency.
- 7/29/04 Specialty Matched Consultant Advisory Panel review 06/08/2004 with no changes made to criteria. References added.
- 3/16/06 Specialty Matched Consultant Advisory Panel review 2/27/06. No change to policy coverage criteria. Expanded Description of Procedure for clarification. Rationale added to Policy Guidelines. Policy number added to Key Words. References and codes updated.
- 8/21/06 Medical Policy changed to Evidence Based Guideline.
- 4/21/08 Routine biennial review. Definition of New York Heart Association Functional Classification moved from Guidelines section to Medical Term Definitions section. In the guidelines section for When Biventricular Pacemakers are appropriate: revised Item 2 to read "Left ventricular ejection fraction of less than or equal to 35%" and revised Item 3 to read "QRS duration of greater than or equal to 120 msec." Added Item B to read, "NYHA Class II Class II patients with a pacemaker and who meet criteria 2 through 4 above may be appropriate for biventricular pacemakers rather than standard pacemakers if they require a routine pacemaker replacement." References updated. Specialty Matched Consultant Advisory Panel review 3/12/08. No change to policy statement.

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.