Thoracic Electrical Bioimpedance Cardiac Output Monitoring

Policy Number: HS-106

Original Effective Date: 5/22/2009


APPLICATION STATEMENT

The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.
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DISCLAIMER

The Clinical Coverage Guideline is intended to supplement certain standard WellCare benefit plans. The terms of a member’s particular Benefit Plan, Evidence of Coverage, Certificate of Coverage, etc., may differ significantly from this Coverage Position. For example, a member’s benefit plan may contain specific exclusions related to the topic addressed in this Clinical Coverage Guideline. When a conflict exists between the two documents, the Member’s Benefit Plan always supersedes the information contained in the Clinical Coverage Guideline. Additionally, Clinical Coverage Guidelines relate exclusively to the administration of health benefit plans and are NOT recommendations for treatment, nor should they be used as treatment guidelines. The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any. Note: The lines of business (LOB) are subject to change without notice; consult www.wellcare.com/Providers/CCGs for list of current LOBs.

BACKGROUND

Transthoracic electric bioimpedance (TEB), also called plethysmography or impedance cardiography (ICG), has been investigated as a noninvasive method for the measurement of cardiac output. Bioimpedance is performed by applying a small electrical current to the chest, and through electrodes placed on the neck and sides. The pulsatile flow of blood causes fluctuations in the current, and the device calculates cardiac output from the impedance waveform. Changes in the impedance of the transthoracic electric current are measured electronically, processed by a computer to calculate blood flow, and displayed in real time. The computer software typically displays cardiac data collected over the preceding seconds or minutes, which allows continuous monitoring of alterations in heart rate, cardiac output, and other cardiovascular functions.

The principal advantages of electrical bioimpedance for measurement of cardiac output are that it allows continuous monitoring and is noninvasive, without the small but definite risk associated with catheterization during thermodilution catheterization (TDC). Compared with bioimpedance cardiography, catheterization takes longer to initiate and it requires more highly skilled personnel. Cardiac output measurements are often important in critical situations, such as in hospital emergency rooms and intensive care units, where the difference in time to start bioimpedance monitoring offers a significant advantage over TDC.

POSITION STATEMENT

Applicable To:
☑ Medicaid
☑ Medicare

Thoracic Electrical Bioimpedance (TEB) for cardiac output monitoring is considered medically necessary in the following circumstances:

1. Differentiation of cardiogenic from pulmonary causes of acute dyspnea when medical history, physical examination, and standard assessment tools provide insufficient information, and the treating physician has determined that TEB hemodynamic data are necessary for appropriate management of the member; OR,

2. Optimization of atrioventricular (A/V) interval for members with A/V sequential cardiac pacemakers when medical history, physical examination, and standard assessment tools provide insufficient information, and the treating physician has determined that TEB hemodynamic data are necessary for appropriate management of the member; OR,

3. Monitoring of continuous inotropic therapy for members with terminal congestive heart failure, when those members have chosen to die with comfort at home, or for members waiting at home for a heart transplant; OR,

4. Evaluation for rejection in members with a heart transplant as a predetermined alternative to a myocardial biopsy. Medical necessity must be documented should a biopsy be performed after TEB; OR,

5. Optimization of fluid management in members with congestive heart failure when medical history, physical examination, and standard assessment tools provide insufficient information, and the treating physician has
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determined that TEB hemodynamic data are necessary for appropriate management of the member.

TEB is considered NOT medically necessary and NOT a covered benefit for members:

1. With proven or suspected disease involving severe regurgitation of the aorta; OR,
2. With minute ventilation (MV) sensor function pacemakers, since the device may adversely affect the functioning of that type of pacemaker; OR,
3. During cardiac bypass surgery; OR,
4. In the management of all forms of hypertension

CODING

Covered CPT® Codes
93701  Bio-impedance, thoracic, electrical

HCPCS® Codes - No applicable codes

Covered ICD-9-CM Procedure Codes
89.59  Other non-operative cardiac and vascular diagnostic procedures and vascular measurements

Draft ICD-10-PCS (Inpatient Only)
Refer to the following ICD-10-PCS tables for specific code assignment based on physician documentation.

NOTE: Per ICD-10-PCS Coding Guidelines, "ICD-10-PCS codes are composed of seven characters. Each character is an axis of classification that specifies information about the procedure performed. Within a defined code range, a character specifies the same type of information in that axis of classification. "One of 34 possible values can be assigned to each axis of classification in the seven-character code".

4A0  Measurement & Monitoring; Physiological Systems; Measurement

Covered ICD-9-CM Diagnosis Codes
398.91  Rheumatic heart failure (congestive); Rheumatic left ventricular failure
428.0  Congestive Heart failure; Right heart failure secondary to left heart failure
648.60 - 648.64  Other cardiovascular diseases in mother complicating pregnancy, childbirth or the puerperium
786.09  Other dyspnea and respiratory abnormalities
996.83  Complications of transplanted heart
V42.1  Heart replaced by transplant
V45.01  Atrioventricular (AV) Sequential Cardiac Pacemaker in situ
V53.31  Atrioventricular (AV) Sequential Cardiac Pacemaker Fitting and Adjustment

Non-Covered ICD-9-CM Diagnosis Codes
401.0 - 401.9  Essential Hypertension; Malignant, Benign and Unspecified
424.1  Aortic Valve Regurgitation
746.4  Congenital insufficiency of aortic valve

Covered Draft ICD-10-CM Diagnosis Codes
I09.81  Rheumatic heart failure (code also type of heart failure)
I50.20-I50.9  Heart failure
O99.411 – O99.413, O99.42  Disease of the circulatory system complicating pregnancy
O99.43  Diseases of the circulatory system complicating the puerperium
R06.00, R06.09,R06.3,R06.83,R06.89  Other respiratory abnormalities
T86.20-T86.39  Heart transplant rejection
Z45.010, Z45.18  Encounter for checking battery /testing of generator (battery)
Z45.010  Encounter for checking and testing of cardiac pacemaker pulse generator [battery]
Z45.018 Encounter for adjustment and management of other part of cardiac pacemaker
Z48.21, Z48.280,Z94.1,Z94.3 Encounter for aftercare following heart transplant
Z94.1 Heart transplant status
Z95.0 Presence of cardiac pacemaker

Non-Covered Draft ICD-10-CM Diagnosis Codes
I10 Essential (primary) hypertension
I35.0 – I35.9 Nonrheumatic aortic valve disorders
Q23.1 Congenital insufficiency of aortic valve


REFERENCES

MEDICAL POLICY COMMITTEE HISTORY AND REVISIONS

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