I. Policy: Cardiac Monitoring by Thoracic Electrical Bioimpedance

II. Purpose/Objective:
   To provide a policy of coverage regarding Cardiac Monitoring by Thoracic Electrical Bioimpedance

III. Responsibility:
   A. Medical Directors
   B. Medical Management

IV. Required Definitions
   1. Attachment – a supporting document that is developed and maintained by the policy writer or department requiring/authoring the policy.
   2. Exhibit – a supporting document developed and maintained in a department other than the department requiring/authoring the policy.
   3. Devised – the date the policy was implemented.
   4. Revised – the date of every revision to the policy, including typographical and grammatical changes.
   5. Reviewed – the date documenting the annual review if the policy has no revisions necessary.

V. Additional Definitions
Medical Necessity or Medically Necessary means Covered Services rendered by a Health Care Provider that the Plan determines are:

   a. appropriate for the symptoms and diagnosis or treatment of the Member's condition, illness, disease or injury;
   b. provided for the diagnosis, and the direct care and treatment of the Member's condition, illness disease or injury;
   c. in accordance with current standards of good medical treatment practiced by the general medical community.
   d. not primarily for the convenience of the Member, or the Member's Health Care Provider; and
   e. the most appropriate source or level of service that can safely be provided to the Member. When applied to hospitalization, this further means that the Member requires acute care as an inpatient due to the nature of the services rendered or the Member's condition, and the Member cannot receive safe or adequate care as an outpatient.

Medicaid Business Segment
Medical Necessity shall mean a service or benefit that is compensable under the Medical Assistance Program and if it meets any one of the following standards:

   (i) The service or benefit will, or is reasonably expected to, prevent the onset of an illness, condition or disability.
   (ii) The service or benefit will, or is reasonably expected to, reduce or ameliorate the physical, mental or development effects of an illness, condition, injury or disability.
   (iii) The service or benefit will assist the Member to achieve or maintain maximum functional
capacity in performing daily activities, taking into account both the functional capacity of the Member and those functional capacities that are appropriate for members of the same age.

**DEFINITION:**
Thoracic Electrical Bioimpedance (TEB) is a non-invasive method of measuring cardiac output based on detection of changes in impedance caused by the electrical conductivity of blood that occurs as blood is pumped into the aorta. The procedure is intended as an alternative to invasive cardiac output measurement techniques.

**INDICATIONS:** Coverage limited to Medicare and Medicaid Business Segment per the applicable CMS Mandates.

Covered Indications:

a. 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 insured individual.

b. Optimization of atrioventricular (A/V) interval for insured individuals 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 patient.

c. Monitoring of continuous inotropic therapy for insured individuals with terminal congestive heart failure, when those patients have chosen to die with comfort at home, or for patients waiting at home for a heart transplant.

d. Evaluation for rejection in insured individuals with a heart transplant as a predetermined alternative to a myocardial biopsy. Medical necessity must be documented should a biopsy be performed after TEB.

e. Optimization of fluid management in patients with congestive heart failure 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 insured individual.

**LIMITATIONS:**

1. **TEB is not covered when used to treat individuals with:**
   a. Documented evidence proven or suspected disease involving severe regurgitation of the aorta;
   b. With minute ventilation (MV) sensor function pacemakers, since the device may adversely affect the functioning of that type of pacemaker;
   c. During cardiac bypass surgery; or
   d. In the management of all forms of hypertension with the exception of drug resistant hypertension.

2. All other uses of TEB not otherwise specified are not covered.

3. Regardless of the number of measurements to monitor acute interventions, Medicare and Medicaid will reimburse this service once per day.

4. Procedure must be ordered by the treating physician, and that physician must document that its use aids in the management of the patient.

5. The service will not be payable when used for monitoring during anesthesia or other diagnostic or therapeutic procedure.

**EXCLUSIONS:**
There is insufficient published peer reviewed medical literature to support the efficacy of thoracic electrical bioimpedance for cardiac monitoring. For all lines of business except Medicare and Medicaid, thoracic electrical bioimpedance is considered **experimental, investigational or unproven**. The benefit for Medicare and Medicaid members will be in accordance to CMS mandated coverage as outlined in the current coverage determination.
Note: A complete description of the process by which a given technology or service is evaluated and determined to be experimental, investigational or unproven is outlined in MP 15 - Experimental Investigational or Unproven Services or Treatment.

CODING ASSOCIATED WITH: Cardiac Monitoring by Thoracic Electrical Bioimpedance

The following codes are included below for informational purposes and may not be all inclusive. Inclusion of a procedure or device code(s) does not constitute or imply coverage nor does it imply or guarantee provider reimbursement. Coverage is determined by the member specific benefit plan document and any applicable laws regarding coverage of specific services.

CPT/HCPCS Codes
93701 Bioimpedance, thoracic, electrical

ICD10 Codes
I10, I11.0, I11.9, I12.0, I12.9, I13.0, I13.10, I13.11, I13.2, I13.5, I15.0, I15.1, I15.2, I15.8, I15.9, I27.0, I27.1, I27.20, I27.21, I27.22, I27.23, I27.24, I27.29, I27.81, I27.82, I27.83, I27.89, I42.0, I42.1, I42.2, I42.5, I42.7, I42.8, I43, I50.1, I50.21, I50.22, I50.23, I50.30, I50.31, I50.32, I50.33, I50.40, I50.41, I50.42, I50.43, I50.9, J80, J96.00, J96.01, J96.02, J96.21 J96.22, O90.3, R06.01,R06.02,R06.03, Z48.21, Z48.280, Z94.1, Z94.3, A18.84


LINE OF BUSINESS:
Eligibility and contract specific benefits, limitations and/or exclusions will apply. Coverage statements found in the line of business specific benefit document will supersede this policy. For Medicare, applicable LCD’s and NCD’s will supercede this policy. For PA Medicaid Business segment, this policy applies as written.

REFERENCES:


Centers for Medicare & Medicaid Services (CMS) [Web site]. National Coverage Determination (NCD) for Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (TEB) (20.16) - covered. Updated December 2006


This policy will be revised as necessary and reviewed no less than annually.

Devised: 03/03
Revised: 2/04 (CMS Coverage Determination); 7/04 (drop prior auth); 7/05 (update reference); 7/06 (limitations/coding); 7/07 (updated indications and Limitation section); 7/08, 7/15 (revised Limitations)
Reviewed: 7/09, 7/10, 7/11, 7/12, 7/13, 7/14, 7/16, 6/17, 6/18