01-93000-29

Original Effective Date: 02/15/00

Reviewed: 02/26/26

Revised: 10/01/26

Subject: Thoracic Electrical Bioimpedance (TEB)

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

Position Statement	Billing/Coding	Reimbursement	Program Exceptions	Definitions	Related Guidelines
Other	References	Updates			

DESCRIPTION:

Thoracic electrical bioimpedance (TEB) devices, a form of plethysmography, monitors cardiac output by non-invasively measuring hemodynamic parameters, including stroke volume, systemic vascular resistance, and thoracic fluid status.

POSITION STATEMENT:

Thoracic electrical bioimpedance (TEB) **meets the definition of medical necessity** for the following indications, when the treating physician has determined that TEB hemodynamic data are necessary for appropriate management:

- Differentiation of cardiogenic from pulmonary causes of acute dyspnea when medical history, physical examination, and standard assessment tools provide insufficient information
- Optimization of atrioventricular (A/V) interval for individuals with A/V sequential cardiac pacemakers when medical history, physical examination, and standard assessment tools provide insufficient information
- Monitoring of continuous inotropic therapy for individuals with terminal congestive heart failure, when those individuals have chosen to die with comfort at home, or for those waiting at home for a heart transplant
- Evaluation for rejection in individuals with a heart transplant as predetermined alternative to a myocardial biopsy
- Optimization of fluid management in individuals with congestive heart failure when medical history, physical examination, and standard assessment tools provide insufficient information
- Management of drug-resistant hypertension (defined as failure to achieve goal blood pressure in those who are adhering to full doses of an appropriate three (3) drug regimen that includes a diuretic)

Thoracic electrical bioimpedance is **experimental or investigational** for all other indications, and specifically for the following conditions:

- Proven or suspected disease involving severe regurgitation of the aorta

- With minute ventilation (MV) sensor function pacemakers (the device may adversely affect the functioning of that type of pacemaker)
- During cardiac bypass surgery
- The management of all forms of hypertension, *except* drug-resistant hypertension as described above

For the above experimental or investigational indications, data in published medical literature are inadequate to permit scientific conclusions on long-term and net health outcomes.

BILLING/CODING INFORMATION:

CPT Coding:

93701	Bioimpedance derived physiologic cardiovascular analysis

ICD-10 Diagnosis Codes That Support Medical Necessity:

I01.0 – I01.9	Rheumatic fever with heart involvement
I05.0 – I05.9 I06.0 – I06.9 I07.0 – I07.9 I08.0 – I08.9 I09.0 – I09.2 I09.81 I09.89 I09.9	Chronic rheumatic heart diseases
I11.0	Hypertensive heart disease with heart failure
I13.0 – I13.2	Hypertensive heart and chronic kidney disease
I20.0 – I20.9	Angina pectoris
I21.01 – I21.09 I21.11 – I21.19 I21.21 – I21.29 I21.3 I21.4	ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction
I22.0 – I22.9	Subsequent ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction
I24.0 – I24.9	Other acute ischemic heart diseases
I25.10 I25.110 – I25.119 I25.2 – I25.3 I25.41 – I25.42 I25.5 I25.6 I25.700 – I25.709 I25.710 – I25.719 I25.720 – I25.729 I25.730 – I25.739 I25.750 – I25.759 I25.790 – I25.799 I25.810 – I25.812 I25.82 – I25.89 I25.9	Chronic ischemic heart disease
I26.01 – I26.09 I26.90 – I26.99	Pulmonary embolism

I27.0 – I27.2 I27.81 – I27.89 I27.9	Other pulmonary heart diseases
I30.0 – I30.9	Acute pericarditis
I31.0 – I32	Other diseases of pericardium
I32.0 – I31.9 I32	Acute and subacute endocarditis
I33.0	Acute and subacute infective endocarditis
I33.9	Acute and subacute endocarditis
I34.0 – I34.9	Nonrheumatic mitral valve disorders
I36.0 – I36.9	Nonrheumatic tricuspid valve disorders
I37.0 – I37.9	Nonrheumatic pulmonary valve disorders
I39	Endocarditis and heart valve disorders in diseases classified elsewhere
I40.0 – I40.9	Acute myocarditis
I41	Myocarditis in diseases classified elsewhere
I42.00 – I42.9	Cardiomyopathy
I43	Cardiomyopathy in diseases classified elsewhere
I50.1 – I50.9	Rheumatic mitral valve diseases
I51.7	Cardiomegaly
I51.81	Takotsubo syndrome
I60.00 – I60.9	Nontraumatic subarachnoid hemorrhage
I97.0 I97.110 – I97.111 I97.120 – I97.121 I97.130 – I19.131 I97.190 – I97.191	Intraoperative and postprocedural complications and disorders of circulatory system, not elsewhere classified
J81.0	Acute pulmonary edema
J95.84	Transfusion-related acute lung injury (TRALI)
R06.00 – R06.09	Dyspnea
T86.20 – T86.23 T86.290 – T86.298	Complications of heart transplant
T86.30 – T86.39	Complications of heart-lung transplant
Z45.010 – Z45.018	Encounter for checking and testing of cardiac pacemaker
Z94.1	Heart transplant status
Z95.0	Presence of cardiac pacemaker

REIMBURSEMENT INFORMATION:

Refer to **POSITION STATEMENT**.

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage products: The following National Coverage Determination (NCD) was reviewed on the last guideline reviewed date: Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (TEB) (20.16) located at cms.gov.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at Coverage Protocol Exemption Request.

DEFINITIONS:

Bioimpedance: the electrical resistance of tissue to the flow of current.

Cardiac output: equals the stroke volume multiplied by the heart rate.

Inotropic therapy: cardiotonic; increases the tonicity of the heart using various drugs (i.e., digitalis).

Plethysmography: recording of the changing of the size of a part as modified by the circulation of the blood in it.

RELATED GUIDELINES:

None applicable.

OTHER:

None applicable.

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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 02/26/26.

GUIDELINE UPDATE INFORMATION:

02/15/00	New Medical Coverage Guideline.
01/01/02	HCPCS Coding changes.
02/15/03	Reviewed; no changes.
03/15/04	Annual review. References updated. MCG name changed to Thoracic Electrical Bioimpedance (TEB). Changes to coverage criteria. MCG changed to Active but no longer scheduled for routine review.
05/15/08	Review and revision of guideline consisting of references.
06/15/09	Scheduled review; no change in position statement.
01/01/10	Annual HCPCS coding update: revise description for CPT 93701.
10/15/10	Revision; related ICD-10 codes added.
06/15/11	Scheduled review; Position Statement unchanged; references updated.

01/01/12	Annual HCPCS coding update: reference to CPT codes 93720, 93721, and 93722 replaced with new code 94726.
05/15/14	Revision; Program Exceptions section updated.
10/01/15	Revision; updated ICD9 and ICD10 coding section.
11/01/15	Revision: ICD-9 Codes deleted.
03/15/19	Scheduled review. Revised description, position statement, Medicare program exception, and index terms. Updated references.
11/15/20	Scheduled review. Revised description, maintained position statement, and updated references.
08/15/22	Scheduled review. Maintained position statement and updated references.
05/22/23	Update to Program Exceptions section.
08/15/24	Scheduled review. Maintained position statement and updated references.
03/15/26	Position statements maintained.
10/01/26	ICD-10 coding update. Code I42.00 added; code I42.0 deleted.