

Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (TEB) (NCD 20.16)

Guideline Number: MPG037.06
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[↪ Terms and Conditions](#)

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Related Medicare Advantage Coverage Summary
<ul style="list-style-type: none"> Cardiovascular Diagnostic and Therapeutic Procedures

Policy Summary

[↪ See Purpose](#)

Overview

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

Guidelines

Nationally Covered Indications

TEB is covered for the following uses:

- Evaluation for rejection in patients with a heart transplant as a predetermined alternative to a myocardial biopsy. Medical necessity must be documented should a biopsy be performed after TEB.
- Optimization of fluid management in patients with congestive heart failure when physical examination, medical history, and standard assessment tools provide insufficient information and the treating physician has determined that TEB hemodynamic data is necessary.
- Differentiation of cardiogenic from pulmonary causes of acute dyspnea when physical examination, medical history, and standard assessment tools provide insufficient information and the treating physician has determined that TEB hemodynamic data is necessary.
- Optimization of atrioventricular (A/V) interval for patients with A/V sequential cardiac pacemakers when physical examination, medical history, and standard assessment tools provide insufficient information, and the treating physician has determined that TEB hemodynamic data is necessary.
- Monitoring of continuous inotropic therapy for patients 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.

Nationally Non-Covered Indications

- TEB is non-covered when used for:
 - During cardiac bypass surgery;
 - With proven or suspected disease involving severe regurgitation of the aorta;
 - With minute ventilation (MV) sensor function pacemakers, since the device may adversely affect the functioning of that type of pacemaker; or,

- In the management of all forms of hypertension (with the exception of drug-resistant hypertension as outlined below).
- TEB for all other uses not otherwise specified remains non-covered.

Other

Medicare Administrative Contractors have discretion to determine whether the use of TEB for the management of drug-resistant hypertension is reasonable and necessary. Drug-resistant hypertension is defined as failure to achieve goal blood pressure in patients who are adhering to full doses of an appropriate 3-drug regimen that includes a diuretic.

Applicable Codes

The following list(s) of codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this guideline does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
93701	Bioimpedance-derived physiologic cardiovascular analysis

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References

CMS National Coverage Determination (NCD)

[NCD 20.16 Cardiac Output Monitoring by Thoracic Electrical Bioimpedance \(TEB\)](#)

CMS Transmittal(s)

[Transmittal 1580, Change Request 9252, Dated 12/03/2015 \(ICD-10 Conversion/Coding Infrastructure Revisions to National Coverage Determinations \(NCDs\)–3rd Maintenance CR\)](#)

[Transmittal 1975, Change Request 10318, Dated 11/09/2017 \(ICD-10 and Other Coding Revisions to National Coverage Determinations \(NCDs\)\)](#)

[Transmittal 2005, Change Request 10318, Dated 01/18/2018 \(ICD-10 and Other Coding Revisions to National Coverage Determinations \(NCDs\)\)](#)

UnitedHealthcare Commercial Policy

[Electrical Bioimpedance for Cardiac Output Measurement](#)

Guideline History/Revision Information

Revisions to this summary document do not in any way modify the requirement that services be provided and documented in accordance with the Medicare guidelines in effect on the date of service in question.

Date	Summary of Changes
04/01/2021	Template Update <ul style="list-style-type: none"> ● Reformatted policy; transferred content to new template
10/14/2020	Related Policies <ul style="list-style-type: none"> ● Added reference link to the Medicare Advantage Coverage Summary titled <i>Cardiovascular Diagnostic and Therapeutic Procedures Policy Summary</i> Other <ul style="list-style-type: none"> ● Replaced language indicating “<i>UnitedHealthcare</i> has the discretion to determine whether the use of thoracic electrical bioimpedance (TEB) for the management of drug-resistant hypertension is

Date	Summary of Changes
	<p>reasonable and necessary” with “<i>Medicare Administrative Contractors</i> have the discretion to determine whether the use of thoracic electrical bioimpedance (TEB) for the management of drug-resistant hypertension is reasonable and necessary”</p> <p>Supporting Information</p> <ul style="list-style-type: none"> Archived previous policy version MPG037.05

Purpose

The Medicare Advantage Policy Guideline documents are generally used to support UnitedHealthcare Medicare Advantage claims processing activities and facilitate providers’ submission of accurate claims for the specified services. The document can be used as a guide to help determine applicable:

- Medicare coding or billing requirements, and/or
- Medical necessity coverage guidelines; including documentation requirements.

UnitedHealthcare follows Medicare guidelines such as NCDs, LCDs, LCAs, and other Medicare manuals for the purposes of determining coverage. It is expected providers retain or have access to appropriate documentation when requested to support coverage. Please utilize the links in the [References](#) section below to view the Medicare source materials used to develop this resource document. This document is not a replacement for the Medicare source materials that outline Medicare coverage requirements. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

Terms and Conditions

The Medicare Advantage Policy Guidelines are applicable to UnitedHealthcare Medicare Advantage Plans offered by UnitedHealthcare and its affiliates.

These Policy Guidelines are provided for informational purposes, and do not constitute medical advice. Treating physicians and healthcare providers are solely responsible for determining what care to provide to their patients. Members should always consult their physician before making any decisions about medical care.

Benefit coverage for health services is determined by the member specific benefit plan document* and applicable laws that may require coverage for a specific service. The member specific benefit plan document identifies which services are covered, which are excluded, and which are subject to limitations. In the event of a conflict, the member specific benefit plan document supersedes the Medicare Advantage Policy Guidelines.

Medicare Advantage Policy Guidelines are developed as needed, are regularly reviewed and updated, and are subject to change. They represent a portion of the resources used to support UnitedHealthcare coverage decision making. UnitedHealthcare may modify these Policy Guidelines at any time by publishing a new version of the policy on this website. Medicare source materials used to develop these guidelines include, but are not limited to, CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Medicare Benefit Policy Manual, Medicare Claims Processing Manual, Medicare Program Integrity Manual, Medicare Managed Care Manual, etc. The information presented in the Medicare Advantage Policy Guidelines is believed to be accurate and current as of the date of publication and is provided on an "AS IS" basis. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

You are responsible for submission of accurate claims. Medicare Advantage Policy Guidelines are intended to ensure that coverage decisions are made accurately based on the code or codes that correctly describe the health care services provided. UnitedHealthcare Medicare Advantage Policy Guidelines use Current Procedural Terminology (CPT®), Centers for Medicare and Medicaid Services (CMS), or other coding guidelines. References to CPT® or other sources are for definitional purposes only and do not imply any right to reimbursement or guarantee claims payment.

Medicare Advantage Policy Guidelines are the property of UnitedHealthcare. Unauthorized copying, use, and distribution of this information are strictly prohibited.

*For more information on a specific member's benefit coverage, please call the customer service number on the back of the member ID card or refer to the [Administrative Guide](#).