Coverage Summary

Cardiovascular Diagnostic Procedures

Policy Number: C-013  Products: UnitedHealthcare Medicare Advantage Plans

Original Approval Date: 12/15/2008

Approved by: UnitedHealthcare Medicare Benefit Interpretation Committee  Last Review Date: 03/19/2019

Related Medicare Advantage Policy Guidelines:

- Ambulatory Blood Pressure Monitoring (NCD 20.19)
- Biomarkers in Cardiovascular Risk Assessment
- Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (TEB) (NCD 20.16)
- Cardiointegram (CIG) as an Alternative to Stress Test or Thallium Stress Test (NCD 20.27)
- Diagnostic Endocardial Electrical Stimulation (Pacing) (NCD 20.12)
- Digital Subtraction Angiography (NCD 220.9)
- Displacement Cardiography (NCD 20.24)
- Electrocardiographic Services (NCD 20.15)
- External Electrocardiographic Recording
- Microvolt T-Wave Alternans (MTWA) (NCD 20.30)
- Noninvasive Tests of Carotid Function (NCD 20.17)
- Percutaneous Coronary Interventions
- Plethysmography (NCD 20.14)

This information is being distributed to you for personal reference. The information belongs to UnitedHealthcare and unauthorized copying, use, and distribution are prohibited. This information is intended to serve only as a general reference resource and is not intended to address every aspect of a clinical situation. Physicians and patients should not rely on this information in making health care decisions. Physicians and patients must exercise their independent clinical discretion and judgment in determining care. Each benefit plan contains its own specific provisions for coverage, limitations, and exclusions as stated in the Member’s Evidence of Coverage (EOC)/Summary of Benefits (SB). If there is a discrepancy between this policy and the member’s EOC/SB, the member’s EOC/SB provision will govern. The information contained in this document is believed to be current as of the date noted.

The benefit information in this Coverage Summary is based on existing national coverage policy, however, Local Coverage Determinations (LCDs) may exist and compliance with these policies is required where applicable.

There are instances where this document may direct readers to a UnitedHealthcare Commercial Medical Policy, Medical Benefit Drug Policy, and/or Coverage Determination Guideline (CDG). In the absence of a Medicare National Coverage Determination (NCD), Local Coverage Determination (LCD), or other Medicare coverage guidance, CMS allows a Medicare Advantage Organization (MAO) to create its own coverage determinations, using objective evidence-based rationale relying on authoritative evidence (Medicare IOM Pub. No. 100-16, Ch. 4, §90.5).

INDEX TO COVERAGE SUMMARY

I. COVERAGE

1. Diagnostic Endocardial Electrical Stimulation (EES)
2. Digital Subtraction Angiography (DSA)
3. Digoxin Therapeutic Drug Assay
4. Electrocardiographic (EKG) Services
5. HIS Bundle Study
6. Cardiac catheterization performed other than a hospital setting
7. Thoracic Electrical Bioimpedance (TEB)
8. Displacement Cardiography (including Cardiokymography and Photokymography
9. Cardiointegram (CIG)
10. Ambulatory Blood Pressure Monitoring
11. Non-invasive Test of Carotid Function (Direct and Indirect)
12. Plethysmography
13. Microvolt T-wave Alternans
I. COVERAGE

Coverage Statement: Cardiovascular diagnostic procedures are covered when Medicare coverage criteria are met.

Guidelines/Notes:

The following is not an all inclusive list of cardiac diagnostic procedures, but reflects diagnostic procedures based on the National Coverage Determinations (NCDs) listed below.

1. **Diagnostic Endocardial Electrical Stimulation (EES)**
   
   Diagnostic endocardial electrical stimulation is covered when criteria are met. See the *NCD for Diagnostic Endocardial Electrical Stimulation (Pacing) (20.12)*. (Accessed January 3, 2019)

2. **Digital Subtraction Angiography (DSA)**
   
   Digital subtraction angiography is covered the same as conventional angiography. Payment for DSA should not exceed, and may be less than, that being paid for conventional angiographic techniques. See the *NCD for Digital Subtraction Angiography (220.9)*. (Accessed January 3, 2019)

3. **Digoxin Therapeutic Drug Assay**
   
   Digoxin therapeutic drug assay is covered. For specific indications, see the *NCD for Digoxin Therapeutic Drug Assay (190.24)*. (Accessed January 3, 2019)

4. **Electrocardiographic (EKG) Services**
   
   EKG services, including Electrocardiogram Ambulatory Electrocardiography (AECG) (Holter monitor or Real-time EKG), Cardiac Event Monitor or Event Recorders are covered when specific criteria are met. See the *NCD for Electrocardiographic Services (20.15)* (Accessed January 3, 2019)

   *Local Coverage Determinations (LCDs)/Local Coverage Articles (LCAs) exist and compliance with these policies is required where applicable. These LCDs/LCAs are available at [http://www.cms.gov/medicare-coverage-database/overview-and-quick-search.aspx](http://www.cms.gov/medicare-coverage-database/overview-and-quick-search.aspx).* (Accessed January 3, 2019)

5. **HIS Bundle Study**
   
   HIS Bundle Study is covered for selected patients. For specific indications, see the *NCD for HIS Bundle Study (20.13)*. (Accessed January 3, 2019)

6. **Cardiac Catheterization Performed Other than a Hospital Setting**
   
   Cardiac catheterization performed other than a hospital setting is a covered service. The procedure may also be covered when performed in a freestanding clinic when the carrier, in consultation with the appropriate Peer Review Organization (PRO), determines that the
procedure can be performed safely in all respects in the particular facility.

In the absence of an NCD, local Medicare Contractors, UnitedHealthcare Medicare Advantage can determine whether a cardiac catheterization performed in a freestanding facility is reasonable and necessary.

*See the Decision Memo for Cardiac Catheterization Performed In Other Than A Hospital Setting (CAG-00166N). (Accessed January 3, 2019)*

**Note:** CMS repealed the NCD for Cardiac Catheterization Performed in Other than a Hospital Setting (20.25) effective January 12, 2006. (Accessed January 3, 2019)

7. **Thoracic Electrical Bioimpedance (TEB)**
   TEB devices are covered when specific patient criteria are met. *See the NCD for Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (20.16). (Accessed January 3, 2019)*

8. **Displacement Cardiography (including Cardiokymography and Photokymography)**
   Displacement cardiography, including cardiokymography and photokymography, is a noninvasive diagnostic test used in evaluating coronary artery disease.
   a) Cardiokymography is a **covered service** only when it is used as an adjunct to electrocardiographic stress testing in evaluating coronary artery disease and only when the following clinical indications are present:
      - For male patients, atypical angina pectoris or nonischemic chest pain; or
      - For female patients, angina, either typical or atypical
   b) Photokymography is **not covered**.
      *See the NCD for Displacement Cardiography (20.24). (Accessed January 3, 2019)*


9. **Cardiointegram (CIG)**
   Cardiointegram (CIG) is **not a covered** benefit as it is considered by Medicare as investigational. *See the NCD for Cardiointegram (CIG) as an Alternative to Stress Test or Thallium Stress Test (20.27). (Accessed January 3, 2019)*

10. **Ambulatory Blood Pressure Monitoring**
   Ambulatory blood pressure monitoring is **covered** when criteria are met. *See the NCD for Ambulatory Blood Pressure Monitoring (20.19). (Accessed January 3, 2019)*

   Also see the *Coverage Summary for Durable Medical Equipment (DME), Prosthetics, Corrective Appliances/Orthotics (Non-Foot Orthotics) and Medical Supplies Grid.*

11. **Non-invasive Test of Carotid Function (Direct and Indirect)**
   Refer to the *Coverage Summary for Carotid Procedures and Testing.*

12. **Plethysmography**
   Plethysmography is **covered** when Category I tests criteria are met. Category II tests are considered experimental and therefore, not covered. *See the NCD for Plethysmography (20.14). (Accessed January 3, 2019)*

   Local Coverage Determinations (LCDs)/Local Coverage Articles (LCAs) exist and
13. **Microvolt T-wave Alternans**

Microvolt T-wave Alternans diagnostic testing **is covered** for the evaluation of patients at risk for SCD, only when the spectral analysis method is used.

Microvolt T-wave Alternans diagnostic testing **is not covered** for the evaluation of patients at risk for SCD if measurement is not performed employing the spectral analysis.


**NCD Update:** On January 13, 2015, Centers for Medicare & Medicaid Services has decided that no National Coverage Determination (NCD) is appropriate at this time for microvolt T-wave alternans (MTWA) testing using the modified moving average (MMA) method for the evaluation of patients at risk for sudden cardiac death (SCD). National non-coverage will be removed. Medicare coverage of MTWA using the MMA method will be determined by the local contractors. The CMS final decision memo pertaining to this update is available at [http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=275](http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=275). (Accessed January 3, 2019)

14. **Intravascular Coronary Ultrasound (CPT codes 92978 and 92979)**

- Medicare does not have a National Coverage Determination (NCD) for intravascular coronary ultrasound.
- Local Coverage Determinations (LCDs)/Local Coverage Article (LCAs) exist and compliance with these policies is required where applicable. For state-specific LCDs/LCAs, refer to the LCD Availability Grid (Attachment A).
- **For states with no LCDs/LCAs,** refer to the MCG™ Care Guidelines, 23rd edition, 2019, Intravascular Ultrasound (Coronary and Non-Coronary) ACG: A-0717(AC) for information regarding medical necessity review. **(IMPORTANT NOTE:** After checking the LCD Availability Grid and searching the [Medicare Coverage Database](http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=275), if no state LCD/LCA is found, then use the above referenced policy.
- **Committee approval date:** March 19, 2019
- Accessed May 1, 2019

15. **Arterial Compliance Testing, Using Waveform Analysis (CPT code 93050)**

- Medicare does not have a National Coverage Determination (NCD) for arterial compliance testing, using waveform analysis.
- Local Coverage Determinations (LCDs)/Local Coverage Article (LCAs) exist and compliance with these policies is required where applicable. For state-specific LCDs/LCAs, refer to the LCD Availability Grid (Attachment B).
- **For states with no LCDs/LCAs,** see the [UnitedHealthcare Commercial Medical Policy for Cardiovascular Disease Risk Tests](http://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=275) for coverage guidelines. **(IMPORTANT NOTE:** After checking the LCD Availability Grid and searching the Medicare Coverage Database, if no state LCD/LCA is found, then use the above referenced policy.)
- **Committee approval date:** January 15, 2019
- Accessed May 1, 2019
II. DEFINITIONS

Diagnostic Services: A service is "diagnostic" if it is an examination or procedure to which the patient is subjected, or which is performed on materials derived from a hospital outpatient, to obtain information to aid in the assessment of a medical condition or the identification of a disease. Among these examinations and tests are diagnostic laboratory services such as hematology and chemistry, diagnostic x-rays, isotope studies, EKGs, pulmonary function studies, thyroid function tests, psychological tests, and other tests given to determine the nature and severity of an ailment or injury. See the Medicare Benefit Policy Manual, Chapter 6, §20.4.1- Diagnostic Services Defined. (Accessed January 3, 2019)

III. REFERENCES

See above

IV. REVISION HISTORY

04/01/2019  • Updated policy introduction; added language to clarify:
    o There are instances where [the Coverage Summary] may direct readers to a UnitedHealthcare Commercial Medical Policy, Medical Benefit Drug Policy, and/or Coverage Determination Guideline (CDG)
    o In the absence of a Medicare National Coverage Determination (NCD), Local Coverage Determination (LCD), or other Medicare coverage guidance, CMS allows a Medicare Advantage Organization (MAO) to create its own coverage determinations, using objective evidence-based rationale relying on authoritative evidence (Medicare IOM Pub. No. 100-16, Ch. 4, §90.5)
    • Retitled reference link that directs users to UnitedHealthcare Commercial policy

03/19/2019  Re-review with the following update:


01/15/2019  Annual review with the following updates:

Guideline 1 [Diagnostic Endocardial Electrical Stimulation (EES)] - deleted detailed description and/or coverage language (also outlined in the reference NCD for Diagnostic Endocardial Electrical Stimulation (Pacing) (20.12).

Guideline 2 [Digital Subtraction Angiography (DSA)] - deleted detailed description and/or coverage language (also outlined in the reference NCD for Digital Subtraction Angiography (220.9).

Guideline 3 (Digoxin Therapeutic Drug Assay) - deleted detailed description and/or coverage language (also outlined in the reference NCD for Digoxin Therapeutic Drug Assay (190.24).

Guideline 4 [Electrocardiographic (EKG) Services] - updated statement that LCDs are available to a general statement deleting specific LCD titles.

Guideline 5 (HIS Bundle Study) - deleted detailed description and/or coverage language (outlined in the reference NCD for HIS Bundle Study (20.13).

Guideline 6 (Cardiac Catheterization Performed Other than a Hospital Setting) -
added reference link to the Decision Memo for Cardiac Catheterization Performed In Other Than A Hospital Setting.

Guideline 7 [Thoracic Electrical Bioimpedance (TEB)] - deleted detailed description and/or coverage language (also outlined in the reference NCD for Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (20.16).

Guideline 9 [Cardiointegram (CIG)] - deleted detailed description and/or coverage language (also outlined in the reference NCD for Cardiointegram (CIG) as an Alternative to Stress Test or Thallium Stress Test (20.27).

Guideline 12 (Plethysmography)
- Deleted detailed description and/or coverage language (also outlined in the reference NCD for Plethysmography (20.14).
- Updated statement that LCDs are available to a general statement deleting specific LCD titles.

Guideline 13 (Microvolt T-wave Alternans)
- Deleted detailed description and/or coverage language (also outlined in the reference NCD for Microvolt T-Wave Alternans (20.30).
- Deleted the following note; language not in the reference NCD:

  *MTWA testing has a role in the risk stratification of patients who may be at risk for sudden cardiac death (SCD) from ventricular arrhythmias. Within patient groups that may be considered candidates for implantable cardioverter defibrillator (ICD) therapy, a negative MTWA test may be useful in identifying low-risk patients who are unlikely to benefit from, and who may experience worse outcomes from ICD placement.*

09/18/2018 Updated Local Coverage Determination (LCD) Availability Grids; removed instruction to “use the applicable LCD based on member’s residence/place and type of service” (this note only applies when selecting the appropriate DME LCD Policy)

04/17/2018 Re-review with the following update:


02/20/2018 Re-review with the following recommended update:

Guideline 15 [Arterial Compliance Testing, Using Waveform Analysis (CPT code 93050)] - added new guideline

01/16/2018 Annual review with no recommended updates.

01/17/2017 Annual review with the following update:
- Guideline 14 (Intravascular Coronary Ultrasound) – changed the default policy from Wisconsin Physicians LCD for Percutaneous Coronary Interventions (L34761) to MCG™ Care Guidelines, 20th edition, 2016 Intravascular Ultrasound (Coronary and Non-Coronary) ACG: A-0717 (AC).

01/19/2016 Annual review with the following update:
Updated reference link(s) of the applicable LCDs to reflect the new condensed LCD link(s).
03/12/2015 Formatting change only.

01/20/2015 Annual review with the following updates:

Guideline 1 [Diagnostic Endocardial Electrical Stimulation (EES)]
- Added the definition of diagnostic endocardial electrical stimulation (from the Definition section)

Guideline 2 [Digital Subtraction Angiography (DSA)]
- Added the definition of digital subtraction angiography (from the Definition section)

Guideline 5 (HIS Bundle Study)
- Added the definition of HIS bundle study (from the Definition section)

Guideline 7 [Thoracic Electrical Bioimpedance (TEB)]
- Added the definition of thoracic electrical bioimpedance (from the Definition section)

Guideline 8 (Displacement Cardiography)
- Added the definition of displacement cardiography (from the Definition section)
- Added reference link to the available Local Coverage Determinations

Guideline 9 (Cardiointegram)
- Added the definition of cardiointegram (from the Definition section)

Guideline 10 (Ambulatory Blood Pressure Monitoring)
- Added reference link to the Durable Medical Equipment (DME), Prosthetics, Corrective Appliances/Orthotics (Non-Foot Orthotics) and Medical Supplies Grid.

Guideline 11 [Non-invasive Test of Carotid Function (Direct and Indirect)]
- Removed guideline in this Coverage Summary; added reference link to the Coverage Summary titled Carotid Procedures and Testing.

Guideline 12 (Plethysmography)
- Added definition of plethysmography (from the Definition section)

Guideline #13 (Microvolt T-wave Alternans)
- Added the definition of microvolt T-wave alternans (from the Definition section)

Guideline 14 (Intravascular Coronary Ultrasound)
- Changed the default guideline for states with no LCDs from National Government Services LCD for Cardiac Catheterization and Coronary Angiography (L26880 and L31829) to Wisconsin Physicians LCD for Percutaneous Coronary Interventions (L34139)

Definitions
- Moved to the Guideline section the definition of:
  - Cardiointegram
  - Displacement Cardiography
  - Diagnostic Endocardia Electrical Stimulation
  - Digital Subtraction Angiography (DSA)
- HIS Bundle Study
- Microvolt T-wave Alternans (MTWA) Testing
- Plethysmography
- Thoracic Electrical Bioimpedance (TEB)

- Removed the definition of:
  - Denervation (not used within this policy)
  - Transthoracic Echocardiography (not used within this policy)

02/18/2014 Annual review; no updates
02/19/2013 Annual review; no updates
02/27/2012 Annual review; Guidelines #14 Intravascular Coronary Ultrasound revised, i.e., the default LCD for states with no LCDs changed from Palmetto L28245 (retired) to NGS L26880 and CIGNA L31829.
06/30/2011 Added Guidelines #14 Intravascular Coronary Ultrasound; also added the definition of Diagnostic Services
02/21/2011 Annual review, no updates
08/27/2010 The link of the NCD for Microvolt T-Wave Alternans (20.30) was updated

V. ATTACHMENT(S)

<table>
<thead>
<tr>
<th>LCD ID</th>
<th>LCD Title</th>
<th>Contractor Type</th>
<th>Contractor</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>L34761</td>
<td>Percutaneous Coronary Interventions</td>
<td>MAC - Part A</td>
<td>Wisconsin Physicians Service Insurance Corporation</td>
<td>AK, AL, AR, AZ, CT, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, OH, OR, RI, SC, SD, TN, UT, VA, VI, VT, WA, WI, WY, WV, WY</td>
</tr>
<tr>
<td>L34761</td>
<td>Percutaneous Coronary Interventions</td>
<td>MAC - Part A and B</td>
<td>Wisconsin Physicians Service Insurance Corporation</td>
<td>IA, IN, KS, MI, MO, NE</td>
</tr>
<tr>
<td>L33623</td>
<td>Percutaneous Coronary Intervention</td>
<td>A and B MAC</td>
<td>National Government Services, Inc.</td>
<td>IL, MN, CT, MA, ME, NH, NY, RI, VT, WI</td>
</tr>
<tr>
<td>L33557</td>
<td>Cardiac Catheterization and Coronary Angiography</td>
<td>A and B MAC</td>
<td>National Government Services, Inc.</td>
<td>IL, MN, CT, MA, ME, NH, NY, RI, VT, WI</td>
</tr>
<tr>
<td>L33959</td>
<td>Cardiac Catheterization and Coronary Angiography</td>
<td>A and B MAC</td>
<td>CGS Administrators, LLC</td>
<td>KY, OH</td>
</tr>
</tbody>
</table>

End of Attachment A
## Attachment B - LCD Availability Grid

### Arterial Compliance Testing, Using Waveform Analysis (CPT code 93050)

**CPT code 93050**

CMS website accessed May 1, 2019

<table>
<thead>
<tr>
<th>LCD ID</th>
<th>LCD Title</th>
<th>Contractor Type</th>
<th>Contractor</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>L36219</td>
<td>Non Covered Services</td>
<td>A and B MAC</td>
<td>Noridian Healthcare Solutions, LLC</td>
<td>CA, HI, NV, AS, GU, MP</td>
</tr>
<tr>
<td>L35008</td>
<td>Non-Covered Services</td>
<td>A and B MAC</td>
<td>Noridian Healthcare Solutions, LLC</td>
<td>AK, AZ, ID, MT, ND, OR, SD, WA, UT, WY</td>
</tr>
<tr>
<td>L33777</td>
<td>Noncovered Services</td>
<td>A and B MAC</td>
<td>First Coast Service Options, Inc.</td>
<td>FL, PR, VI</td>
</tr>
<tr>
<td>L35094</td>
<td>Services That Are Not Reasonable and Necessary</td>
<td>A and B MAC</td>
<td>Novitas Solutions, Inc.</td>
<td>CO, DE, MD, NM, OK, PA, TX</td>
</tr>
</tbody>
</table>

End of Attachment B