Coverage Summary

Neurologic Services and Procedures

Policy Number: N-004
Products: UnitedHealthcare Medicare Advantage Plans
Original Approval Date: 12/15/2008
Approved by: UnitedHealthcare Medicare Benefit Interpretation Committee
Last Review Date: 09/18/2018

Related Medicare Advantage Policy Guidelines:
- Ambulatory EEG Monitoring (NCD 160.22)
- Electroencephalographic Monitoring During Surgical Procedures Involving the Cerebral Vasculature (NCD 160.8)
- Induced Lesions of Nerve Tract (NCD 160.1)
- Invasive Intracranial Pressure Monitoring (NCD 160.14)
- Multiple Electroconvulsive Therapy (MECT) (NCD 160.25)
- Sensory Nerve Conduction Threshold Tests (sNCTs) (NCD 160.23)
- Stereotaxic Depth Electrode Implantation (NCD 160.5)
- Vagus Nerve Stimulation (VNS) (NCD 160.18)

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).

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I. COVERAGE

Coverage Statement: Diagnostic neurologic services and procedures are covered when Medicare coverage criteria are met.

Guidelines/Notes:

1. Surgically induced nerve track lesions to control pain are covered only when criteria are met. See the NCD for Induced Lesions of Nerve Tracts (160.1). (Accessed March 6, 2018)

2. Multiple-seizure electroconvulsive therapy is not covered. See the NCD for Multiple-Seizure Electroconvulsive Therapy (160.25). (Accessed March 6, 2018)
   
   Note: Multiple-seizure electroconvulsive therapy has not been verified by scientifically controlled studies. In addition, studies have demonstrated an increased risk of adverse effects with multiple seizures. Accordingly, MECT cannot be considered reasonable and necessary and is not covered by the Medicare program.

3. Invasive intracranial pressure monitoring is covered. See the NCD for Invasive Intracranial Pressure Monitoring (160.14). (Accessed March 6, 2018)

4. Vagus nerve stimulation is covered. See the NCD for Vagus Nerve Stimulation for Treatment of Seizures (160.18) (Accessed March 6, 2018)
   
   Note: Vagus nerve stimulation is safe and effective treatment for patients with medically refractory partial onset seizures, for whom surgery is not recommended or for whom surgery has failed. Vagus nerve stimulation is not covered for patients with other types of seizure disorders which are medically refractory and for whom surgery is not recommended or for whom surgery has failed.

   Replacement of the battery-powered programmable pulse generator for VNS for the treatment of resistant depression: Effective May 4, 2007, CMS issued the NCD for Vagus Nerve Stimulation for Treatment of Seizures (160.18), specifically stating noncoverage for VNS for the treatment of resistant depression. Prior to this date, VNS for this indication was covered, therefore, replacement of the battery-powered generator for these cases, if needed, will be covered. However, in accordance with the above referenced NCD 160.18, battery replacements for VNS for intractable depression acquired or provided after May 4, 2007 will not be covered. (Accessed March 6, 2018)

5. Stereotaxic depth electrode implantation is covered prior to surgical treatment of focal epilepsy for patients who are unresponsive to anticonvulsant medications has been found both safe and effective for diagnosing resectable seizure foci that may go undetected by conventional scalp EEGs. See the NCD for Stereotaxic Depth Electrode Implantation (160.5). (Accessed March 6, 2018)

6. Electroencephalographic (EEG) monitoring is covered during surgical procedures involving the cerebral vasculature. See the NCD for EEG for Monitoring During Surgical Procedures Involving the Cerebral Vasculature (160.8). (Accessed March 6, 2018)

7. Ambulatory or 24 hour EEG (paper or digital interpretation) is covered for patients in whom a seizure diathesis is suspected but not defined by history, physical or resting EEG. Ambulatory EEG can be utilized in the differential diagnosis of syncope and transient ischemic attacks if not elucidated by conventional studies. See the NCD for Ambulatory EEG Monitoring (160.22). (Accessed March 6, 2018)
Notes:
- Ambulatory EEG should always be preceded by an awake and asleep resting EEG. Digital EEG interpretation EEG techniques are considered established in
  a. Epilepsy: For screening for possible epileptic spikes or seizures in long-term EEG monitoring recording to facilitate subsequent expert visual EEG interpretation
  b. Operating Room (OR) and Intensive Care Unit (ICU) monitoring: For continuous EEG monitoring by frequency-trending to detect early, acute intracranial complications in the OR or ICU, and for screening for possible epileptic seizures (convulsive or non convulsive) in high-risk ICU patients
- Local Coverage Determinations (LCDs)/Local Coverage Articles (LCAs) exist for EEG – 24 hour Monitoring and compliance with these policies is required where applicable. These LCDs are available at: http://www.cms.hhs.gov/mcd/index_local_alpha.asp?from=alphalmrp&letter=E. (Accessed February 22, 2019)

8. Intraoperative Neurophysiological Monitoring
   See the Coverage Summary for Neurophysiological Studies.

9. Sensory Nerve Conduction Threshold Tests (sNCTs)
   All uses of sNCTs to diagnose sensory neuropathies or radiculopathies are not covered. See the NCD for Sensory Nerve Conduction Threshold Tests (sNCTs) (160.23). (Accessed March 6, 2018)

10. Electromyography (EMG) and Nerve Conduction Studies
    - Medicare does not have a National Coverage Determination for Electromyography (EMG) and nerve conduction studies.
    - Local Coverage Determinations (LCDs)/Local Coverage Articles (LCAs) exist for all 50 states. Compliance with these policies is required where applicable. For state-specific LCDs/LCAs, see the LCD Availability Grid (Attachment A).
    - Committee approval date: January 16, 2018
    - Accessed May 1, 2019

11. Plagiocephaly and Craniosynostosis Treatment
    - Medicare does not have a National Coverage Determination (NCD) for plagiocephaly and craniosynostosis treatment.
    - Local Coverage Determinations (LCDs)/Local Coverage Articles (LCAs) do not exist at this time.
    - For coverage guideline, see the UnitedHealthcare Commercial Medical Policy for Plagiocephaly and Craniosynostosis Treatment. (IMPORTANT NOTE: After searching the Medicare Coverage Database, if no state LCD/LCA is found, then use the above referenced policy.)
    - Committee approval date: January 16, 2018
    - Accessed May 17, 2018

II. DEFINITIONS

Electroencephalographic (EEG) Monitoring: Technique used in the assessment of gross cerebral blood flow during general anesthesia. EEG monitoring as an indirect measure of cerebral perfusion requires the expertise of an electroencephalographer, a neurologist trained in EEG, or an advanced EEG technician for its proper interpretation. NCD for EEG for Monitoring During Surgical
**Sensory Nerve Conduction Test:** A sNCTs is a psychophysical assessment of both central and peripheral nerve functions. It measures the detection threshold of accurately calibrated sensory stimuli. This procedure is intended to evaluate and quantify function in both large and small caliber fibers for the purpose of detecting neurologic disease. Sensory perception and threshold detection are dependent on the integrity of both the peripheral sensory apparatus and peripheral-central sensory pathways. In theory, an abnormality detected by this procedure may signal dysfunction anywhere in the sensory pathway from the receptors, the sensory tracts, the primary sensory cortex, to the association cortex.

This procedure is different and distinct from assessment of nerve conduction velocity, amplitude and latency. It is also different from short-latency somatosensory evoked potentials. **NCD for Sensory Nerve Conduction Threshold Tests (sNCTs)** (160.23). (Accessed March 6, 2018)

**Stereotaxic Depth Electrode Implantation:** The procedure employs thin wire electrodes which are implanted in the brain of the focal epileptic patient for electroencephalograph (EEG) monitoring. By taking several readings during seizure activity, the location of the epileptic focus may be found, so that better informed decisions can be made regarding the surgical treatment of persons with intractable seizures. **NCD for Stereotaxic Depth Electrode Implantation** (160.5). (Accessed March 6, 2018)

### III. REFERENCES

### IV. REVISION HISTORY

<table>
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<tr>
<th>Date</th>
<th>Updates</th>
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<tbody>
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<td>04/01/2019</td>
<td>Updated policy introduction; added language to clarify:</td>
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<td></td>
<td>○ 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)</td>
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<td>○ 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 (<strong>Medicare IOM Pub. No. 100-16, Ch. 4, §90.5</strong>)</td>
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<td>○ Retitled reference link that directs users to UnitedHealthcare <strong>Commercial</strong> policy</td>
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<td>09/18/2018</td>
<td>Updated Local Coverage Determination (LCD) Availability Grid; 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)</td>
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<td>Guideline 10 [Electromyography (EMG) and Nerve Conduction Studies] - Updated the applicable LCDs to include the most recent website links and effective dates related to the Cahaba-Palmetto jurisdiction transition; no change in guideline.</td>
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<td>Guideline 11 [Magneto-encephalography and Magnetic Source Imaging (MEG/MSI)] - delete guideline; default UHC MP for states with no LCDs was retired (no longer require clinical coverage review); still no available NCD and LCDs.</td>
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<td>01/17/2017</td>
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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).

03/24/2015  Annual review with the following updates:
- Guideline #7 – Removed reference to NCD for EEG Monitoring During Open-Heart Surgery. (160.9) (retired).
- Guideline #11 - Electromyography (EMG) and Nerve Conduction Studies –
  - Added reference language of “ Local Coverage Articles” and “for all 50 states”.
  - Deleted statement “For states with no LCDs, refer to the Coverage Summaries Guidelines below; based on the Highmark LCD for Nerve Conduction Studies (NCS)/Electromyography (EMG) (L29547)”
- Definitions: Added appropriate CMS reference to all definitions.

02/18/2014  Annual review; no updates.

12/17/2013  Guideline #4 (Vagus Nerve Stimulation)
- Added language to indicate that replacement of the battery-powered generator for VNS for the treatment of resistant depression provided prior to May 4, 2007, if needed, will be covered

02/19/2013  Annual review; no updates

02/27/2012  Annual review; no updates

08/29/2011  Moved the guidelines for Sensory Nerve Conduction Threshold Tests (sNCTs) from Guidelines #9 to Guidelines #10. CS also updated to include
- Guidelines #11 Electromyography (EMG) and Nerve Conduction Studies

02/21/2011  Annual review; no updates

08/27/2010  Updated the link of the NCD for Vagus Nerve Stimulation for Treatment of Seizures (160.18)

V. ATTACHMENT(S)

<table>
<thead>
<tr>
<th>Attachment A - LCD Availability Grid</th>
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<tbody>
<tr>
<td>Electromyography (EMG) and Nerve Conduction Studies</td>
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End of Attachment A