MEDICAL COVERAGE POLICY

SERVICE: Neurophysiological Monitoring During Procedure

Policy Number:	**234**
Effective Date:	**06/01/2025**
Last Review:	**04/14/2025**
Next Review:	**04/14/2026**

Important note: *Unless otherwise indicated, medical policies will apply to all lines of business. Medical necessity as defined by this policy does not ensure the benefit is covered. This medical policy does not replace existing federal or state rules and regulations for the applicable service or supply. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan documents. See the member plan specific benefit plan document for a complete description of plan benefits, exclusions, limitations, and conditions of coverage. In the event of a discrepancy, the plan document always supersedes the information in this policy.*

SERVICE: Neurophysiological Monitoring During Procedure or Intraoperative Neurophysiologic Monitoring (IONM)

PRIOR AUTHORIZATION: Required

POLICY: Please review the plan's EOC (Evidence of Coverage) or Summary Plan Description (SPD) for coverage details.

Note: Unless otherwise indicated (see below), this policy will apply to all lines of business.

For Medicare plans, please refer to appropriate Medicare NCD (National Coverage Determination) or LCD (Local Coverage Determination).LCD 35003 - Intraoperative Neurophysiological Testing, LCA A56722 - Billing and Coding: Intraoperative Neurophysiological Testing.. If there are no applicable NCD or LCD criteria, use the criteria set forth below.

> See LCD 35003 for covered indications and additional details regarding when remote monitoring may be permissible for Medicare members.

For Medicaid plans, please confirm coverage as outlined in the Texas Medicaid Provider Procedures Manual | TMHP (TMPPM). If there are no applicable criteria to guide medical necessity decision making in the TMPPM, use the criteria set forth below.

> See TMPPM 9.2.28.3.2 for additional details regarding when remote monitoring may be permissible for Medicaid members.

BSWHP may consider continuous intraoperative neurophysiologic monitoring (IONM) medically necessary when **ALL** of the following criteria are met:

A. Due to the nature of these services and the potential for significant morbidity in procedures requiring intraoperative monitoring, these services may be considered medically necessary in the **inpatient setting ONLY**.
B. IOM is performed by either a licensed physician trained in clinical neurophysiology (e.g., neurologist, physiatrist) or a trained technologist who is practicing within the scope of his/her license/certification as defined by state law (if applicable) or appropriate authorities, is working under the direct supervision of a physician trained in neurophysiology and is in continuous attendance in the operating room.
C. IOM is interpreted by a licensed physician trained in clinical neurophysiology, other than the

operating surgeon or anesthesiologist, who is physically present in the operating suite or present by means of a real-time remote mechanism for all electroneurodiagnostic (END) monitoring situations and is immediately available to interpret the recording and advise the surgeon. Monitoring is conducted and interpreted real-time (either on-site or at a remote location) and continuously communicated to the surgical team.

D. There is significant risk of central nervous system (brain / spinal cord), peripheral nervous system (cranial nerves / nerve plexuses) during a surgical procedure that can be detected and prevented through use of IONM, such as the following (this list may not be all inclusive):
   1. Intracranial procedures
      a. Basal ganglia surgery for intractable movement disorders
      b. Deep brain stimulation
      c. Epileptogenic brain tumor/tissue resection
      d. Resection of brain tissue close to the primary motor cortex and requiring brain mapping
      e. Skull base tumor
   2. Spinal cord / column procedures
      a. Anterior cervical spine surgery associated with any of the following increased risk procedures
         i. Prior anterior cervical surgery (particularly revision anterior cervical discectomy and fusion, revision surgery through a scarred surgical field, reoperation for pseudoarthrosis, or revision for failed fusion)
         ii. Multilevel anterior cervical discectomy and fusion
      b. Lumbar spine surgeries above the L1-L2 level
      c. Decompressive procedures on the spinal cord or cauda equina carried out for myelopathy or claudication
      d. Procedure in close proximity to the spinal cord or when there is risk of cord compression or mechanical spinal distraction
         i. Placement or removal of old hardware (e.g., pedicle screws)
         ii. Prior numerous interventions
         iii. Scoliosis corrective surgery
         iv. Spinal cord tumor
         v. Spinal fractures
   3. Cranial nerve and peripheral nerve
      a. Cavernous sinus tumor
      b. Cranial nerve tumor resection
      c. Facial nerve (e.g., acoustic neuroma, microvascular decompression of the facial nerve for hemifacial spasm, parotid tumor resection, neurotologic / otologic procedures)
      d. Foramen magnum surgery
      e. Leg lengthening procedure when there is traction on the sciatic nerve
      f. Microvascular decompression of cranial nerves
      g. Neck dissection
      h. Neuromas of peripheral nerves of brachial plexus, when there is risk to major sensory or motor nerves

i. Neuroma of peripheral nerve
j. Oval or round window graft
k. Recurrent laryngeal nerve surgery associated with any of the following increased risk procedures (e.g., total thyroidectomy, repeat thyroid or parathyroid surgery, surgery for cancer, thyrotoxicosis, retrosternal or giant goiter, thyroiditis)
l. Vestibular section for vertigo, endolymphatic shunt for Meniere's disease

4. Vascular procedures that may result in central or peripheral nervous system ischemia / injury
   a. Aortic surgeries – aortic arch, thoracic aorta
   b. Arteriography, during which there is a test occlusion of the carotid artery
   c. Bronchial artery arteriovenous malformation or tumor
   d. Cerebral aneurysm
   e. Internal carotid artery surgeries (e.g., endarterectomy)
   f. Intracranial arteriovenous malformation

IONM is NOT considered medically necessary for ANY of the following because there is insufficient medical literature demonstrating benefit:

A. Monitoring during lumbar surgery performed below vertebral level L1 - L2.
B. Monitoring during epidural injections.
C. Monitoring during radiofrequency ablation/denervation procedures
D. Monitoring during placement of spinal cord stimulators or an intrathecal pain pump.
E. During radiofrequency ablation/denervation procedure

IONM has been deemed experimental, investigational and/or unproven for the following:

A. Intraoperative EMG and nerve conduction velocity monitoring on the peripheral nerves during surgery.
B. Intraoperative monitoring of visual-evoked potentials.
C. IONM of the recurrent laryngeal nerve during anterior cervical spine surgery not meeting the criteria above or during esophageal surgeries.

BACKGROUND:

Intraoperative neurophysiological monitoring has been utilized in attempts to minimize neurological morbidity from operative manipulations. The goal of such monitoring is to identify changes in brain, spinal cord, and peripheral nerve function prior to irreversible damage. Intraoperative monitoring also has been effective in localizing anatomical structures, including peripheral nerves and sensorimotor cortex, which helps guide the surgeon during dissection.

Evoked potential monitoring includes somatosensory evoked potentials (SSEP), brainstem auditory evoked potentials (BAEP), motor evoked potentials (MEP), and visual evoked potentials (VEP). Electromyography (EMG) also is used extensively during operative cases. Scalp electroencephalography (EEG) provides data for analysis in SSEP, BAEP, and VEP. Scalp EEG also can be used to monitor cerebral function during carotid or other vascular surgery. In addition, EEG

recorded directly from the pial surface, or electrocorticography (ECoG), is used to help determine resection margins for epilepsy surgery, and to monitor for seizures during electrical stimulation of the brain carried out while mapping cortical function.

Due to the nature of these services and the potential for significant morbidity in some procedures requiring intraoperative monitoring, these services are considered reasonable and necessary in the inpatient setting only. Undivided attention to a unique patient will be required during surgeries covered for this procedure.

Base codes:

- 95813 - Electroencephalogram (EEG) extended monitoring; greater than 1 hour
- 95829 - Electrocorticogram at surgery
- 95864 - EMG, four extremities (five or more muscles)
- 95870 - Stimulated EMG (four or fewer muscles in 1 extremity), commonly used for pedicle screw testing
- 95925 - Short-latency somatosensory evoked potential study, recording from the central nervous system; in upper limbs
- 95926 - Short-latency somatosensory evoked potential study, recording from the central nervous system; in lower limbs
- 95927 - Short-latency somatosensory evoked potential study, recording from the central nervous system; in the trunk or head
- 95928 - Central motor evoked potential study (transcranial motor stimulation); upper limbs
- 95929 - Central motor evoked potential study (transcranial motor stimulation); lower limbs
- 95937 - Neuromuscular junction testing
- 95938 - Somatosensory evoked potentials (SSEPs), upper and lower limbs
- 95939 - Motor evoked potentials (MEPs), upper and lower limbs
- 95865 - Needle electromyography; larynx
- 95955 - Electroencephalogram (EEG) during non-intracranial surgery

CODES:

Important note: *Due to the wide range of applicable diagnosis codes and potential changes to codes, an inclusive list may not be presented, but the following codes may apply. Inclusion of a code in this section does not guarantee that it will be reimbursed, and patient must meet the criteria set forth in the policy language.*

CPT Codes * Add-on codes (List separately in addition to code for primary procedure)	*95940 - Continuous intraoperative neurophysiology monitoring in the operating room, one on one monitoring requiring personal attendance *95941 - Continuous intraoperative neurophysiology monitoring, from outside of the operating room (remote or nearby) or for monitoring of more than one case while in the operating room, per hour *G0453 (**Medicare ONLY**) - Continuous intraoperative neurophysiology monitoring, from outside the operating room (remote or nearby), per patient Other codes that may be associated with IOM: 95813 - Electroencephalogram (EEG) extended monitoring; greater than 1 hour 95829 - Electrocorticogram at surgery 95864 - EMG, four extremities (five or more muscles) 95870 - Stimulated EMG (four or fewer muscles in 1 extremity), commonly used for pedicle screw testing *95885 Needle electromyography each extremity done with nerve conduction, amplitude and latency/velocity study 95925 - Short-latency somatosensory evoked potential study, recording from the central nervous system; in upper limbs 95926 - Short-latency somatosensory evoked potential study, recording from the central nervous system; in lower limbs 95927 - Short-latency somatosensory evoked potential study, recording from the central nervous system; in the trunk or head 95928 - Central motor evoked potential study (transcranial motor stimulation), upper limbs 95929 - Central motor evoked potential study (transcranial motor stimulation), lower limbs 95937 - Neuromuscular junction testing 95938 - Somatosensory evoked potentials (SSEPs), upper and lower limbs 95939 - Motor evoked potentials (MEPs), upper and lower limbs 95865 - Needle electromyography; larynx 95955 - Electroencephalogram (EEG) during nonintracranial surgery
CPT Codes Not Covered	95941 - (**Medicare only**) - Continuous intraoperative neurophysiological monitoring, from outside the operating room (remote or nearby) or for monitoring of more than one case while in the operating room G0453 – (**Non-Medicare**) Continuous intraoperative neurophysiology monitoring, from outside the operating room (remote or nearby), per patient
ICD-10 Codes	
ICD-10 Codes Not Covered	

POLICY HISTORY:

Status	Date	Action
New	06/13/2017	New policy
Update	08/24/2017	Changed PA status to “Required”
Review	04/24/2018	No changes
Review	07/25/2019	No changes
Review	06/25/2020	Updated language for use across all LOBs
Review	06/24/2021	No changes
Review	06/23/2022	No changes
Updated	09/22/2022	Clarified situations appropriate for IONM
Reviewed	07/27/2023	Minor clarifications
Reviewed	07/24/2024	Formatting changes, added hyperlinks to CMS and TMPPM resources, beginning and ending note sections updated to align with CMS requirements and business entity changes, and added additional examples of procedures that may require IONM
Reviewed	04/14/2025	Updated Medical Criteria section C to include real-time remote monitoring; Removed the note requiring monitoring only while physically present in the room; added an additional indication for which IONM is considered not medically necessary; From Background section, removed add-on codes section and incorporated that verbiage in the Codes chart; Also in the codes chart: removed “Medicaid Only” for 95941; Non-covered code cpt code 95941-updated to Medicare only (i.e 95941 is covered for all lines of businesses except Medicare. Medicare uses cpt G0453); minor formatting changes to Codes chart; additional reference added; ending note sections updated to align with CMS requirements and business entity changes
Updated	08/11/2025	Removed “Medicare NCD or LCD specific InterQual criteria may be used when available.” Clarified update from 4/14/25.

REFERENCES:

The following scientific references were utilized in the formulation of this medical policy. BSWHP will continue to review clinical evidence related to this policy and may modify it at a later date based upon the evolution of the published clinical evidence. Should additional scientific studies become available, and they are not included in the list, please forward the reference(s) to BSWHP so the information can be reviewed by the Medical Coverage Policy Committee (MCPC) and the Quality Improvement Committee (QIC) to determine if a modification of the policy is in order.

1. Sutter MA, Eggspuehler A, Grob D, Porchet F, Jeszenszky D, Dvorak J. Multimodal intraoperative monitoring (MIOM) during 409 lumbosacral surgical procedures in 409 patients. Eur Spine J. 2007 Nov;16 Suppl 2:S221-8. Epub 2007 Oct 3.
2. Uribe JS, Isaacs RE, Youssef JA, Khajavi K, Balzer JR, Kanter AS, Küelling FA, Peterson MD; SOLAS Degenerative

Study Group. Can triggered electromyography monitoring throughout retraction predict postoperative symptomatic neuropraxia after XLIF? Results from a prospective multicenter trial. Eur Spine J. 2015 Apr;24 Suppl 3:378-85.

3. Yaylali I, Ju H, Yoo J, Ching A, Hart R. Intraoperative neurophysiological monitoring in anterior lumbar interbody fusion surgery. J Clin Neurophysiol. 2014 Aug;31(4):352-5.
4. Pease M, Gandhoke GS, Kaur J, Thirumala P, Balzer J, Crammond D, Okonkwo DO, Kanter AS. Predictive Value of Intraoperative Neurophysiological Monitoring During Spine Surgery: A Prospective Analysis of 4489 Consecutive Patients. Neurosurgery. 2016 Aug;63 Suppl 1:192-3.
5. American Association of Neuromuscular and Electrodiagnostic Medicine (AANEM); January 2023

***Note**:*
Health Maintenance Organization (HMO) products are offered through Scott and White Health Plan dba Baylor Scott & White Health Plan, and Scott & White Care Plans dba Baylor Scott & White Care Plan. Insured PPO and EPO products are offered through Baylor Scott & White Insurance Company. Scott and White Health Plan dba Baylor Scott & White Health Plan serves as a third-party administrator for self-funded employer-sponsored plans. Baylor Scott & White Care Plan and Baylor Scott & White Insurance Company are wholly owned subsidiaries of Scott and White Health Plan. These companies are referred to collectively in this document as Baylor Scott & White Health Plan.

RightCare STAR Medicaid plans are offered through Scott and White Health Plan in the Central Managed Care Service Area (MRSA) and STAR and CHIP plans are offered through SHA LLC dba FirstCare Health Plans (FirstCare) in the Lubbock and West MRSAs.