

Policy Name:	Intraoperative Neurophysiologic Monitoring (IONM)
Effective Date:	7/18/2022

Important Information – Please Read Before Using This Policy

These services may or may not be covered by all Medica plans. Coverage is subject to requirements in applicable federal or state laws. Please refer to the member's plan document for other specific coverage information. If there is a difference between this general information and the member's plan document, the member's plan document will be used to determine coverage. With respect to Medicare, Medicaid, and other government programs, this policy will apply unless these programs require different coverage. Members may contact Medica Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions may call the Medica Provider Service Center toll-free at 1-800-458-5512.

Medica coverage policies are not medical advice. Members should consult with appropriate health care providers to obtain needed medical advice, care, and treatment.

Coverage Policy

The use of continuous intraoperative neurophysiologic monitoring (IONM) is **COVERED** when the individual meets all of the following:

- A. One or more of the following IONM's are used:
 - Somatosensory-evoked potentials (SSEPs)
 - Motor-evoked potentials (MEPs) using transcranial electrical stimulation
 - Brainstem auditory-evoked potentials (BAEPs)
 - Electromyography (EMG) of cranial nerves
 - Electroencephalography (EEG)
 - Electrocorticography (ECoG)
- B. IONM is performed by either a licensed physician trained in clinical neurophysiology or a trained technologist who is practicing within the scope of his/her state license/certification, working under the direct supervision of a physician trained in neurophysiology, and who is not the operating surgeon or anesthesiologist.
- C. IONM is interpreted in real time by a licensed physician trained in clinical neurophysiology, other than the operating surgeon or anesthesiologist, who is either on-site or at a remote location and is immediately available to interpret the recording and provide interventional recommendations to the surgical team.
- D. There is significant risk of damage to a cranial nerve, spinal cord, or to an essential central nervous system structure compromising neurologic function during one of the following surgical procedures:
 1. For use during spinal surgery (cervical, thoracic or lumbar) when there is risk of cord compression/injury due to abnormal anatomy, including but not limited to:
 - Removal of spinal cord tumor or cyst
 - Correction of spinal arteriovenous malformation
 - Scoliosis correction or deformity of spinal cord involving instrumentation or traction of the cord
 - Surgical stabilization of spinal cord trauma/fractures
 - Previous spinal surgery/revisions

2. For use during intracranial and cranial nerves surgery, when there is abnormal anatomy that may pose a potential risk of significant damage to a cranial nerve or an essential central nervous system structure compromising neurologic function, including but are not limited to:
 - Resection of tumors, such as skull base or cavernous sinus tumor
 - Correction of cerebral vascular malformations
 - Epileptogenic foci tissue resection
 - Facial nerve surgery, such as acoustic neuroma, microvascular decompression, or parotid tumor resection
3. For use during surgery of plexus nerves when there is a tumor or abnormal anatomy that may pose a potential risk of significant damage to the plexus and when the surgical procedure is performed directly on the nerves, including but are not limited to:
 - Repair of brachial plexus nerves
 - Repair of sacral plexus nerves
4. For use during vascular surgeries that put the central nervous system at risk for cerebral ischemia, such as surgery of the aortic arch or carotid arteries, or distal aortic procedures where there is risk of spinal cord ischemia, including but are not limited to:
 - Aortic aneurysm repair
 - Carotid artery surgery, such endarterectomy
 - Surgery or embolization for intracranial arteriovenous malformation
 - Correction of bronchial artery malformation or tumor
5. For use during high-risk thyroid and parathyroid surgery that pose a potential risk of significant damage to the recurrent laryngeal nerve (RLN), including but are not limited to:
 - Complete resection of the thyroid or bilateral resection
 - Repeat thyroid or parathyroid surgery
 - Thyrotoxicosis
 - Surgery for cancer
 - Thyroiditis
 - Retrosternal giant goiter or malignancy

IONM is investigative and unproven and therefore **NOT COVERED** for any surgical indications other than those listed above, including but not limited to:

1. Individuals with normal anatomy undergoing routine surgical procedures:
 - Routine cervical/lumbar/thoracic fusion
 - Nerve decompression or discectomy for disc herniation
 - Laminectomy for spinal stenosis
 - Routine thyroid and parathyroid gland lobectomy or dissection
2. Cardiac surgery
3. Esophageal surgeries

There is insufficient reliable evidence in the form of high quality peer-reviewed medical literature to establish the efficacy or effects on health care outcomes.

Note: IONM performed by the attending surgeon or anesthesiologist is considered integral to the primary procedure and not separately reimbursable.

Note: See also related position statements: *Vestibular Evoked Myogenic Potentials (VEMP)*; *Quantitative Sensory Tests*; *Automated, Non-Invasive Nerve Conduction*

Description

Intraoperative neurophysiologic monitoring (IONM) describes a variety of procedures used to monitor the integrity of neural pathways during high-risk neurosurgical, orthopedic, and vascular surgeries. It involves the detection of electrical signals produced by the nervous system in response to sensory or electrical stimuli to provide information about the functional integrity of neuronal structures.

The principal goal of intraoperative neurophysiologic monitoring (IONM) is the identification of nervous system impairment on the assumption that prompt intervention will prevent permanent deficits. Correctable factors at surgery include circulatory disturbance, excess compression from retraction, bony structures, hematomas, or mechanical stretching. The technology is continuously evolving with refinements in equipment and analytic techniques, including recording, with several patients monitored under the supervision of a physician who is outside the operating room.

Intraoperative monitoring modalities may include, but are not limited to the following neurophysiological techniques, alone or in combination:

- **Sensory Evoked Potentials** (i.e. somatosensory [SSEP], auditory brainstem evoked responses [ABR], visual evoked potentials [VEP]): These procedures describes the responses of the sensory pathways to sensory or electrical stimuli and assess the functional integrity of central nervous system (CNS) pathways during surgeries that put the spinal cord or brain at risk for significant ischemia or traumatic injury.
- **Motor Evoked Potentials (MEP)**: MEPs are recorded from muscles following direct or transcranial electrical stimulation of motor cortex or by pulsed magnetic stimulation provided by a coil placed over the head.
- **Electromyography (EMG) and Nerve Conduction Velocity Measurements**: These procedures may be used to assess the status of the cranial or peripheral nerves (e.g. to identify the extent of nerve damage prior to nerve grafting or during resection of tumors) and used for surgical procedures with a risk of vocal cord paralysis due to damage to the RLN (i.e. during carotid artery, thyroid, parathyroid, goiter, or anterior cervical spine procedures). In addition, these techniques may be used during surgical procedures around the nerve roots and around peripheral nerves to assess the presence of excessive traction or other impairment.
- **Electroencephalogram (EEG Monitoring) and Electrocorticography (ECoG)**: EEG is used to record electrical activity in the cerebral cortex to detect cerebral ischemia, seizure activity, and the impact of anesthetic agents on the brain. It may identify those patients who would benefit from the use of a vascular shunt during a surgical procedure to restore adequate cerebral perfusion (e.g. carotid endarterectomy). Conversely, shunts, which have an associated risk of iatrogenic complications, may be avoided in those patients in whom the EEG is normal. ECoG is the recording of the EEG directly from a surgically exposed cerebral cortex.

FDA Approval

IONM is a procedure and therefore not subject to FDA regulation. However, any medical devices, drugs, biologics, or tests used as a part of this procedure may be subject to FDA regulation. Monitoring systems suitable for multimodal intraoperative monitoring are regulated by the FDA as class II devices, and a large number of EEG and EMG monitors have been cleared for marketing by the FDA through the 510(k) process. FDA product code: GWQ.

The Digitimer electrical cortical stimulator received U.S. Food and Drug Administration (FDA) premarket approval in 2002.

IONM devices using transcranial magnetic stimulation have not received approval from the FDA for this use.

Prior Authorization

Prior authorization is not required. However, services with specific coverage criteria may be reviewed retrospectively to determine if criteria are being met. Retrospective denial may result if criteria are not met.

Coding Considerations

Use the current applicable CPT/HCPCS code(s). The following codes are included below for informational purposes only, and are subject to change without notice. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement.

CPT Codes

Note: The following add-on codes are to be billed with appropriate primary procedure code

- **95940** - Continuous intraoperative neurophysiology monitoring in the operating room, one on one monitoring requiring personal attendance, each 15 minutes (List separately in addition to code for primary procedure)
- **95941** – Continuous intraoperative neurophysiology monitoring, from outside the operating room (remote or nearby) or for monitoring of more than one case while in the operating room, per hour (List separately in addition to code for primary procedure)
- **G0453** - Continuous intraoperative neurophysiology monitoring, from outside the operating room (remote or nearby), per patient, (attention directed exclusively to one patient) each 15 minutes (list in addition to primary procedure)

Original Effective Date: 7/19/2019

Re-Review Date(s): 2/17/2020 – administrative update; format
5/18/2022