

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>Effective Date:</b>	<b>10/1/2023</b>
------------------------	------------------

[POLICY RATIONALE](#)  
[DISCLAIMER](#)  
[POLICY HISTORY](#)

[PRODUCT VARIATIONS](#)  
[DEFINITIONS](#)  
[CODING INFORMATION](#)

[DESCRIPTION/BACKGROUND](#)  
[BENEFIT VARIATIONS](#)  
[REFERENCES](#)

### I. POLICY

Intraoperative neurophysiology monitoring, which includes somatosensory-evoked potentials, motor-evoked potentials using transcranial electrical stimulation, brainstem auditory-evoked potentials, electromyography (EMG) of cranial nerves, electroencephalography (EEG), and electrocorticography (ECoG), may be considered **medically necessary** during spinal, intracranial, or vascular procedures.

Intraoperative neurophysiologic monitoring of the recurrent laryngeal nerve may be considered **medically necessary** in individuals undergoing:

- high-risk thyroid or parathyroid surgery, including:
  - total thyroidectomy
  - repeat thyroid or parathyroid surgery
  - surgery for cancer
  - thyrotoxicosis
  - retrosternal or giant goiter
  - thyroiditis
- anterior cervical spine surgery associated with any of the following increased risk situations:
  - prior anterior cervical surgery, particularly revision anterior cervical discectomy and fusion, revision surgery through a scarred surgical field, reoperation for pseudarthrosis, or revision for failed fusion
  - multilevel anterior cervical discectomy and fusion
  - preexisting recurrent laryngeal nerve pathology, when there is residual function of the recurrent laryngeal nerve.

Intraoperative neurophysiologic monitoring of the recurrent laryngeal nerve during anterior cervical spine surgery not meeting the criteria above or during esophageal surgeries is considered **investigational**.

Intraoperative monitoring of visual-evoked potentials is considered **investigational**.

Due to the lack of monitors approved by the U.S. Food and Drug Administration, intraoperative monitoring of motor-evoked potentials using transcranial magnetic stimulation is considered **investigational**.

There is insufficient evidence to support a general conclusion concerning the health outcomes or benefits associated with these procedures.

**MEDICAL POLICY**

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

Intraoperative EMG and nerve conduction velocity monitoring during surgery on the peripheral nerves is considered **not medically necessary**.

**Note:** These policy statements refer only to use of these techniques as part of intraoperative monitoring. Other clinical applications of these techniques, such as visual-evoked potentials and EMG, are not considered in this policy.

**Policy Guidelines**

Intraoperative neurophysiologic monitoring including somatosensory-evoked potentials and motor-evoked potentials using transcranial electrical stimulation, brainstem auditory-evoked potentials, electromyography of cranial nerves, electroencephalography, and electrocorticography has broad acceptance, particularly for spine surgery and open abdominal aorta aneurysm repairs. Therefore, this policy focuses on monitoring of the recurrent laryngeal nerve during neck surgeries and monitoring of peripheral nerves.

Constant communication between surgeon, neurophysiologist, and anesthesiologist are required for safe and effective intraoperative neurophysiologic monitoring.

**Cross-references:**

**MP 4.029** Evoked Potential Studies

**II. PRODUCT VARIATIONS**

[TOP](#)

This policy is only applicable to certain programs and products administered by Capital Blue Cross and subject to benefit variations as discussed in Section VI. Please see additional information below.

FEP PPO - Refer to FEP Medical Policy Manual. The FEP Medical Policy manual can be found at: <https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies>

**III. DESCRIPTION/BACKGROUND**

[TOP](#)

**INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING**

The principal goal of intraoperative neurophysiologic monitoring (IONM) is the identification of nervous system impairment in the hope that prompt intervention will prevent permanent deficits. Correctable factors at surgery include circulatory disturbance, excess compression from retraction, bony structures, or 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.

The different methodologies of monitoring are described next.

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

### **Sensory-Evoked Potentials**

Sensory-evoked potential (SEP) describes the responses of the sensory pathways to sensory or electrical stimuli. Intraoperative monitoring of SEPs is used to assess the functional integrity of central nervous system (CNS) pathways during operations that put the spinal cord or brain at risk for significant ischemia or traumatic injury. The basic principles of SEP monitoring involve identification of a neurologic region at risk, selection and stimulation of a nerve that carries a signal through the at-risk region, and recording and interpretation of the signal at certain standardized points along the pathway. Monitoring of SEPs is commonly used during the following procedures: carotid endarterectomy, brain surgery involving vasculature, surgery with distraction compression or ischemia of the spinal cord and brainstem, and acoustic neuroma surgery. SEPs can be further broken down into the following categories according to the type of stimulation used.

### ***Somatosensory-Evoked Potentials***

Somatosensory-evoked potentials (SSEPs) are cortical responses elicited by peripheral nerve stimulations. Peripheral nerves, such as the median, ulnar, or tibial nerves, are typically stimulated, but, in some situations, the spinal cord may be stimulated directly. Recording is done either cortically or at the level of the spinal cord above the surgical procedure. Intraoperative monitoring of SSEPs is most commonly used during orthopedic or neurologic surgery to prompt intervention to reduce surgically induced morbidity and/or to monitor the level of anesthesia. One of the most common indications for SSEP monitoring is in patients undergoing corrective surgery for scoliosis. In this setting, SSEP monitors the status of the posterior column pathways and thus does not reflect ischemia in the anterior (motor) pathways. Several different techniques are commonly used, including stimulation of a relevant peripheral nerve with monitoring from the scalp, from interspinous ligament needle electrodes, or from catheter electrodes in the epidural space.

### ***Brainstem Auditory-Evoked Potentials***

Brainstem auditory-evoked potentials (BAEPs) are generated in response to auditory clicks and can define the functional status of the auditory nerve. Surgical resection of a cerebellopontine angle tumor, such as an acoustic neuroma, places the auditory nerves at risk, and BAEPs have been extensively used to monitor auditory function during these procedures.

### ***Visual-Evoked Potentials***

Visual-evoked potentials (VEPs) with light flashes are used to track visual signals from the retina to the occipital cortex. VEP monitoring has been used for surgery on lesions near the optic chiasm. However, VEPs are very difficult to interpret due to their sensitivity to anesthesia, temperature, and blood pressure.

### **Motor-Evoked Potentials**

Motor-evoked potentials (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. Peripheral motor responses (muscle activity) are recorded by electrodes placed on the skin at prescribed points along the motor pathways. MEPs, especially when

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

induced by magnetic stimulation, can be affected by anesthesia. The Digitimer electrical cortical stimulator received U.S. Food and Drug Administration (FDA) premarket approval in 2002. Devices for transcranial magnetic stimulation have not been approved by FDA for this use.

Multimodal IONM, in which more than 1 technique is used, most commonly with SSEPs and MEPs, has also been described.

### **Electromyogram Monitoring and Nerve Conduction Velocity Measurements**

Electromyography (EMG) monitoring and nerve conduction velocity measurements can be performed in the operating room and may be used to assess the status of the cranial or peripheral nerves (e.g., to identify the extent of nerve damage before nerve grafting or during resection of tumors). For procedures with a risk of vocal cord paralysis due to damage to the recurrent laryngeal nerve (i.e., during carotid artery, thyroid, parathyroid, goiter, or anterior cervical spine procedures), monitoring of the vocal cords or vocal cord muscles has been performed. These techniques may also be used during procedures proximal to the nerve roots and peripheral nerves to assess the presence of excessive traction or other impairment. Surgery in the region of cranial nerves can be monitored by electrically stimulating the proximal (brain) end of the nerve and recording via EMG activity in the facial or neck muscles. Thus, monitoring is done in the direction opposite that of SEPs, but the purpose is similar—to verify that the neural pathway is intact.

### **Electroencephalogram Monitoring**

Spontaneous electroencephalography (EEG) monitoring can also be used during surgery and can be subdivided as follows:

- EEG monitoring has been widely used to monitor cerebral ischemia secondary to carotid cross-clamping during a carotid endarterectomy. EEG monitoring may identify those patients who would benefit from the use of a vascular shunt during the procedure to restore adequate cerebral perfusion. Conversely, shunts, which have an associated risk of iatrogenic complications, may be avoided in those patients with a normal EEG. Carotid endarterectomy may be done with the patient under local anesthesia so that monitoring of cortical function can be directly assessed.
- Electrocorticography (ECoG) is the recording of the EEG directly from a surgically exposed cerebral cortex. ECoG is typically used to define the sensory cortex and map the critical limits of a surgical resection. ECoG recordings have been most frequently used to identify epileptogenic regions for resection. In these applications, ECoG does not constitute monitoring, per se.

Intraoperative neurophysiologic monitoring, including SSEPs and MEPs using transcranial electrical stimulation, BAEPs, EMG of cranial nerves, EEG, and ECoG, has broad acceptance, particularly for spine surgery and open abdominal aorta aneurysm repairs. These indications have long been considered standard of care, as evidenced by numerous society guidelines, including those from the American Academy of Neurology, American Clinical Neurophysiology Society, American Association of Neurological Surgeons, Congress of Neurologic Surgeons,

**MEDICAL POLICY**

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

and American Association of Neuromuscular & Electrodiagnostic Medicine. Therefore, this policy focuses on monitoring of the recurrent laryngeal nerve during neck and esophageal surgeries and monitoring of peripheral nerves.

**Regulatory Status**

A number of EEG and EMG monitors have been cleared for marketing by FDA through the 510(k) process. FDA product code: GWQ.

Intraoperative neurophysiologic monitoring of motor-evoked potentials using transcranial magnetic stimulation does not have FDA approval.

**IV. RATIONALE**

[TOP](#)

**SUMMARY OF EVIDENCE**

For individuals who are undergoing thyroid or parathyroid surgery and are at high risk of injury to the recurrent laryngeal nerve (RLN) who receive intraoperative neurophysiologic monitoring (IONM), the evidence includes a large randomized controlled trial (RCT) and systematic reviews. Relevant outcomes are morbid events, functional outcomes, and quality of life. The strongest evidence on neurophysiologic monitoring derives from an RCT of 1000 patients undergoing thyroid surgery. This RCT found a significant reduction in RLN injury in patients at high risk for injury. High risk in this trial was defined as surgery for cancer, thyrotoxicosis, retrosternal or giant goiter, or thyroiditis. The high-risk category may also include patients with prior thyroid or parathyroid surgery or total thyroidectomy. A low volume of surgeries might also contribute to a higher risk for RLN injury. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who are undergoing anterior cervical spine surgery and are at high-risk of injury to the recurrent laryngeal nerve who receive intraoperative neurophysiologic monitoring, the evidence includes 3 systematic reviews of case series and cohort studies. Relevant outcomes are morbid events, functional outcomes, and quality of life. Two of the 3 analyses compared the risk of nerve injury using intraoperative neurophysiologic monitoring with no intraoperative neurophysiologic monitoring and found no statistically significant difference. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

For individuals who are undergoing esophageal surgery who receive intraoperative neurophysiologic monitoring, the evidence includes a systematic review of mainly nonrandomized comparative studies. Relevant outcomes are morbid events, functional outcomes, and quality of life. The systematic review found less recurrent laryngeal nerve palsy with intraoperative neurophysiologic monitoring but conclusions are limited by the design of the included studies. Current evidence is not sufficiently robust to determine whether neurophysiologic monitoring reduces recurrent laryngeal nerve injury in patients undergoing esophageal surgery. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

For individuals who are undergoing surgery proximal to a peripheral nerve who receive IONM, the evidence includes case series and a controlled cohort study. Relevant outcomes are morbid events, functional outcomes, and quality of life. Surgical guidance with peripheral IONM and the predictive ability of monitoring of peripheral nerves have been reported. No prospective comparative studies were identified that assessed whether outcomes are improved with neurophysiologic monitoring. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who are undergoing spinal instrumentation requiring screws or distraction who receive intraoperative neurophysiologic monitoring, the evidence includes systematic reviews of nonrandomized studies. Relevant outcomes are morbid events, functional outcomes, and quality of life. The available evidence suggests that intraoperative neurophysiologic monitoring has high sensitivity and specificity for detecting neurologic deficits. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

### V. DEFINITIONS

[TOP](#)

N/A

### VI. BENEFIT VARIATIONS

[TOP](#)

The existence of this medical policy does not mean that this service is a covered benefit under the member's health benefit plan. Benefit determinations should be based in all cases on the applicable health benefit plan language. Medical policies do not constitute a description of benefits. A member's health benefit plan governs which services are covered, which are excluded, which are subject to benefit limits and which require preauthorization. There are different benefit plan designs in each product administered by Capital Blue Cross. Members and providers should consult the member's health benefit plan for information or contact Capital Blue Cross for benefit information.

### VII. DISCLAIMER

[TOP](#)

*Capital Blue Cross's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. If a provider or a member has a question concerning the application of this medical policy to a specific member's plan of benefits, please contact Capital Blue Cross' Provider Services or Member Services. Capital Blue Cross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.*

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

### VIII. CODING INFORMATION

[TOP](#)

**Note:** This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

#### Investigational, therefore not covered:

Procedure Codes							
95930							

#### Covered when medically necessary:

Procedure Codes							
G0453	95829	95867	95868	95925	95926	95927	95928
95929	95938	95939	95940	95941	95955		

ICD-10-CM Diagnosis Codes	Description
C41.2	Malignant neoplasm of vertebral column
C70.0	Malignant neoplasm of cerebral meninges
C70.1	Malignant neoplasm of spinal meninges
C71.0	Malignant neoplasm of cerebrum, except lobes and ventricles
C71.1	Malignant neoplasm of frontal lobe
C71.2	Malignant neoplasm of temporal lobe
C71.3	Malignant neoplasm of parietal lobe
C71.4	Malignant neoplasm of occipital lobe
C71.5	Malignant neoplasm of cerebral ventricle
C71.6	Malignant neoplasm of cerebellum
C71.7	Malignant neoplasm of brain stem
C71.8	Malignant neoplasm of overlapping sites of brain
C72.0	Malignant neoplasm of spinal cord
C72.1	Malignant neoplasm of cauda equina
C72.20	Malignant neoplasm of unspecified olfactory nerve
C72.21	Malignant neoplasm of right olfactory nerve
C72.22	Malignant neoplasm of left olfactory nerve
C72.30	Malignant neoplasm of unspecified optic nerve
C72.31	Malignant neoplasm of right optic nerve
C72.32	Malignant neoplasm of left optic nerve
C72.40	Malignant neoplasm of unspecified acoustic nerve

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
C72.41	Malignant neoplasm of right acoustic nerve
C72.42	Malignant neoplasm of left acoustic nerve
C72.50	Malignant neoplasm of unspecified cranial nerve
C72.59	Malignant neoplasm of other cranial nerves
C73	Malignant neoplasm of thyroid gland
C75.0	Malignant neoplasm of parathyroid gland
C79.31	Secondary malignant neoplasm of brain
C79.32	Secondary malignant neoplasm of cerebral meninges
C79.40	Secondary malignant neoplasm of unspecified part of nervous system
C79.49	Secondary malignant neoplasm of other parts of nervous system
D32.0	Benign neoplasm of cerebral meninges
D32.1	Benign neoplasm of spinal meninges
D32.9	Benign neoplasm of meninges, unspecified
D33.0	Benign neoplasm of brain, supratentorial
D33.1	Benign neoplasm of brain, infratentorial
D33.2	Benign neoplasm of brain, unspecified
D33.3	Benign neoplasm of cranial nerves
D33.4	Benign neoplasm of spinal cord
D34	Benign neoplasm of thyroid gland
D35.1	Benign neoplasm of parathyroid gland
D42.0	Neoplasm of uncertain behavior of cerebral meninges
D42.1	Neoplasm of uncertain behavior of spinal meninges
D42.9	Neoplasm of uncertain behavior of meninges, unspecified
D43.0	Neoplasm of uncertain behavior of brain, supratentorial
D43.1	Neoplasm of uncertain behavior of brain, infratentorial
D43.2	Neoplasm of uncertain behavior of brain, unspecified
D43.3	Neoplasm of uncertain behavior of cranial nerves
D43.4	Neoplasm of uncertain behavior of spinal cord
D43.8	Neoplasm of uncertain behavior of other specified parts of central nervous system
D43.9	Neoplasm of uncertain behavior if central nervous system, unspecified
D44.0	Neoplasm of uncertain behavior of thyroid gland
D44.2	Neoplasm of uncertain behavior of parathyroid gland
D44.3	Neoplasm of uncertain behavior of pituitary gland
D44.4	Neoplasm of uncertain behavior of craniopharyngeal duct
D44.5	Neoplasm of uncertain behavior of pineal gland
D49.6	Neoplasm of unspecified behavior of brain
E04.0	Nontoxic diffuse goiter
E04.1	Nontoxic single thyroid nodule



## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
E04.2	Nontoxic multinodular goiter
E04.8	Other specified nontoxic goiter
E04.9	Nontoxic goiter, unspecified
E05.00	Thyrotoxicosis with diffuse goiter without thyrotoxic crisis or storm
E05.01	Thyrotoxicosis with diffuse goiter with thyrotoxic crisis or storm
E05.10	Thyrotoxicosis with toxic single thyroid nodule without thyrotoxic crisis or storm
E05.11	Thyrotoxicosis with toxic single thyroid nodule with thyrotoxic crisis or storm
E05.20	Thyrotoxicosis with toxic multinodular goiter without thyrotoxic crisis or storm
E05.21	Thyrotoxicosis with toxic multinodular goiter with thyrotoxic crisis or storm
E05.30	Thyrotoxicosis from ectopic thyroid tissue without thyrotoxic crisis or storm
E05.31	Thyrotoxicosis from ectopic thyroid tissue with thyrotoxic crisis or storm
E05.40	Thyrotoxicosis factitia without thyrotoxic crisis or storm
E05.41	Thyrotoxicosis factitia with thyrotoxic crisis or storm
E05.80	Other thyrotoxicosis without thyrotoxic crisis or storm
E05.81	Other thyrotoxicosis with thyrotoxic crisis or storm
E05.90	Thyrotoxicosis, unspecified without thyrotoxic crisis or storm
E05.91	Thyrotoxicosis, unspecified with thyrotoxic crisis or storm
E06.0	Acute thyroiditis
E06.1	Subacute thyroiditis
E06.2	Chronic thyroiditis with transient thyrotoxicosis
E06.3	Autoimmune thyroiditis
E06.4	Drug-induced thyroiditis
E06.5	Other chronic thyroiditis
E21.0	Primary hyperparathyroidism
E21.1	Secondary hyperparathyroidism, not elsewhere classified
E21.2	Other hyperparathyroidism
E21.3	Hyperparathyroidism, unspecified
E21.4	Other specified disorders of parathyroid gland
G06.1	Intraspinal abscess and granuloma
G45.0	Vertebro-basilar artery syndrome
G50.0	Trigeminal neuralgia
G50.1	Atypical facial pain
G52.9	Cranial nerve disorder, unspecified
G53	Cranial nerve disorders in diseases classified elsewhere
G54.0	Brachial plexus disorders
G80.4	Ataxic cerebral palsy
G80.8	Other cerebral palsy
G80.9	Cerebral palsy, unspecified
G93.5	Compression of brain

**MEDICAL POLICY**

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
G95.0	Syringomyelia and syringobulbia
G95.81	Conus medullaris syndrome
H71.90	Cholesteatoma, unspecified ear
H71.91	Unspecified cholesteatoma, right ear
H71.92	Unspecified cholesteatoma, left ear
H71.93	Unspecified cholesteatoma, bilateral
I60.00	Nontraumatic subarachnoid hemorrhage from unspecified carotid siphon and bifurcation
I60.01	Nontraumatic subarachnoid hemorrhage from right carotid siphon and bifurcation
I60.02	Nontraumatic subarachnoid hemorrhage from left carotid siphon and bifurcation
I60.10	Nontraumatic subarachnoid hemorrhage from unspecified middle cerebral artery
I60.11	Nontraumatic subarachnoid hemorrhage from right middle cerebral artery
I60.12	Nontraumatic subarachnoid hemorrhage from left middle cerebral artery
I60.2	Nontraumatic subarachnoid hemorrhage from anterior communicating artery
I60.30	Nontraumatic subarachnoid hemorrhage from unspecified posterior communicating artery
I60.31	Nontraumatic subarachnoid hemorrhage from right posterior communicating artery
I60.32	Nontraumatic subarachnoid hemorrhage from left posterior communicating artery
I60.4	Nontraumatic subarachnoid hemorrhage from basilar artery
I60.50	Nontraumatic subarachnoid hemorrhage from unspecified vertebral artery
I60.51	Nontraumatic subarachnoid hemorrhage from right vertebral artery
I60.52	Nontraumatic subarachnoid hemorrhage from left vertebral artery
I60.6	Nontraumatic subarachnoid hemorrhage from other intracranial arteries
I60.7	Nontraumatic subarachnoid hemorrhage from unspecified intracranial artery
I60.8	Other nontraumatic subarachnoid hemorrhage
I60.9	Nontraumatic subarachnoid hemorrhage, unspecified
I61.0	Nontraumatic intracerebral hemorrhage in hemisphere, subcortical
I61.1	Nontraumatic intracerebral hemorrhage in hemisphere, cortical
I61.2	Nontraumatic intracerebral hemorrhage in hemisphere, unspecified
I61.3	Nontraumatic intracerebral hemorrhage in brain stem
I61.4	Nontraumatic intracerebral hemorrhage in cerebellum
I61.5	Nontraumatic intracerebral hemorrhage, intraventricular
I61.6	Nontraumatic intracerebral hemorrhage, multiple localized
I61.8	Other nontraumatic intracerebral hemorrhage

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
I61.9	Nontraumatic intracerebral hemorrhage, unspecified
I62.1	Nontraumatic extradural hemorrhage
I65.01	Occlusion and stenosis of right vertebral artery
I65.02	Occlusion and stenosis of left vertebral artery
I65.03	Occlusion and stenosis of bilateral vertebral arteries
I65.1	Occlusion and stenosis of basilar artery
I65.21	Occlusion and stenosis of right carotid artery
I65.22	Occlusion and stenosis of left carotid artery
I65.23	Occlusion and stenosis of bilateral carotid arteries
I65.8	Occlusion and stenosis of other precerebral arteries
I65.9	Occlusion and stenosis of unspecified precerebral artery
I66.01	Occlusion and stenosis of right middle cerebral artery
I66.02	Occlusion and stenosis of left middle cerebral artery
I66.03	Occlusion and stenosis of bilateral middle cerebral arteries
I66.09	Occlusion and stenosis of unspecified middle cerebral artery
I66.11	Occlusion and stenosis of right anterior cerebral artery
I66.12	Occlusion and stenosis of left anterior cerebral artery
I66.13	Occlusion and stenosis of bilateral anterior cerebral arteries
I66.19	Occlusion and stenosis of unspecified anterior cerebral artery
I66.21	Occlusion and stenosis of right posterior cerebral artery
I66.22	Occlusion and stenosis of left posterior cerebral artery
I66.23	Occlusion and stenosis of bilateral posterior cerebral arteries
I66.29	Occlusion and stenosis of unspecified posterior cerebral artery
I66.3	Occlusion and stenosis of cerebellar arteries
I67.0	Dissection of cerebral arteries, nonruptured
I67.1	Cerebral aneurysm, nonruptured
I67.5	Moyamoya disease
I71.00	Dissection of unspecified site of aorta
I71.010	Dissection of ascending aorta
I71.011	Dissection of aortic arch
I71.012	Dissection of descending thoracic aorta
I71.019	Dissection of thoracic aorta, unspecified
I71.02	Dissection of abdominal aorta
I71.03	Dissection of thoracoabdominal aorta
I71.10	Thoracic aortic aneurysm, ruptured, unspecified
I71.11	Aneurysm of the ascending aorta, ruptured
I71.12	Aneurysm of the aortic arch, ruptured
I71.13	Aneurysm of the descending thoracic aorta, ruptured
I71.20	Thoracic aortic aneurysm, without rupture, unspecified

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
I71.21	Aneurysm of the ascending aorta, without rupture
I71.22	Aneurysm of the aortic arch, without rupture
I71.23	Aneurysm of the descending thoracic aorta, without rupture
I71.30	Abdominal aortic aneurysm, ruptured, unspecified
I71.31	Pararenal abdominal aortic aneurysm, ruptured
I71.32	Juxtarenal abdominal aortic aneurysm, ruptured
I71.33	Infrarenal abdominal aortic aneurysm, ruptured
I71.40	Abdominal aortic aneurysm, without rupture, unspecified
I71.41	Pararenal abdominal aortic aneurysm, without rupture
I71.42	Juxtarenal abdominal aortic aneurysm, without rupture
I71.43	Infrarenal abdominal aortic aneurysm, without rupture
I71.50	Thoracoabdominal aortic aneurysm, ruptured, unspecified
I71.51	Supraceliac aneurysm of the thoracoabdominal aorta, ruptured
I71.52	Paravisceral aneurysm of the thoracoabdominal aorta, ruptured
I71.60	Thoracoabdominal aortic aneurysm, without rupture, unspecified
I71.61	Supraceliac aneurysm of the thoracoabdominal aorta, without rupture
I71.62	Paravisceral aneurysm of the thoracoabdominal aorta, without rupture
I71.8	Aortic aneurysm of unspecified site, ruptured
I71.9	Aortic aneurysm of unspecified site, without rupture
I77.71	Dissection of carotid artery
I77.72	Dissection of iliac artery
I77.73	Dissection of renal artery
I77.74	Dissection of vertebral artery
I77.75	Dissection of other precerebral arteries
I77.76	Dissection of artery of upper extremity
I77.77	Dissection of artery of lower extremity
I77.79	Dissection of other specified artery
M40.00	Postural kyphosis, site unspecified
M40.03	Postural kyphosis, cervicothoracic region
M40.04	Postural kyphosis, thoracic region
M40.05	Postural kyphosis, thoracolumbar region
M40.202	Unspecified kyphosis, cervical region
M40.203	Unspecified kyphosis, cervicothoracic region
M40.204	Unspecified kyphosis, thoracic region
M40.205	Unspecified kyphosis, thoracolumbar region
M40.209	Unspecified kyphosis, site unspecified
M40.40	Postural lordosis, site unspecified
M40.45	Postural lordosis, thoracolumbar region
M40.46	Postural lordosis, lumbar region

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
M40.47	Postural lordosis, lumbosacral region
M41.00	Infantile idiopathic scoliosis, site unspecified
M41.02	Infantile idiopathic scoliosis, cervical region
M41.03	Infantile idiopathic scoliosis, cervicothoracic region
M41.04	Infantile idiopathic scoliosis, thoracic region
M41.05	Infantile idiopathic scoliosis, thoracolumbar region
M41.06	Infantile idiopathic scoliosis, lumbar region
M41.07	Infantile idiopathic scoliosis, lumbosacral region
M41.08	Infantile idiopathic scoliosis, sacral and sacrococcygeal region
M41.112	Juvenile idiopathic scoliosis, cervical region
M41.113	Juvenile idiopathic scoliosis, cervicothoracic region
M41.114	Juvenile idiopathic scoliosis, thoracic region
M41.115	Juvenile idiopathic scoliosis, thoracolumbar region
M41.116	Juvenile idiopathic scoliosis, lumbar region
M41.117	Juvenile idiopathic scoliosis, lumbosacral region
M41.119	Juvenile idiopathic scoliosis, site unspecified
M41.122	Adolescent idiopathic scoliosis, cervical region
M41.123	Adolescent idiopathic scoliosis, cervicothoracic region
M41.124	Adolescent idiopathic scoliosis, thoracic region
M41.125	Adolescent idiopathic scoliosis, thoracolumbar region
M41.126	Adolescent idiopathic scoliosis, lumbar region
M41.127	Adolescent idiopathic scoliosis, lumbosacral region
M41.129	Adolescent idiopathic scoliosis, site unspecified
M41.20	Other idiopathic scoliosis, site unspecified
M41.22	Other idiopathic scoliosis, cervical region
M41.23	Other idiopathic scoliosis, cervicothoracic region
M41.24	Other idiopathic scoliosis, thoracic region
M41.25	Other idiopathic scoliosis, thoracolumbar region
M41.26	Other idiopathic scoliosis, lumbar region
M41.27	Other idiopathic scoliosis, lumbosacral region
M41.30	Thoracogenic scoliosis, site unspecified
M41.34	Thoracogenic scoliosis, thoracic region
M41.35	Thoracogenic scoliosis, thoracolumbar region
M43.01	Spondylolysis, occipito-atlanto-axial region
M43.02	Spondylolysis, cervical region
M43.03	Spondylolysis, cervicothoracic region
M43.04	Spondylolysis, thoracic region
M43.05	Spondylolysis, thoracolumbar region
M43.06	Spondylolysis, lumbar region

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
M43.07	Spondylolysis, lumbosacral region
M43.09	Spondylolysis, multiple sites in spine
M43.11	Spondylolisthesis, occipito-atlanto-axial region
M43.12	Spondylolisthesis, cervical region
M43.13	Spondylolisthesis, cervicothoracic region
M43.14	Spondylolisthesis, thoracic region
M43.15	Spondylolisthesis, thoracolumbar region
M43.16	Spondylolisthesis, lumbar region
M43.17	Spondylolisthesis, lumbosacral region
M43.19	Spondylolisthesis, multiple sites in spine
M43.8x1	Other specified deforming dorsopathies, occipito-atlanto-axial region
M43.8x2	Other specified deforming dorsopathies, cervical region
M43.8x3	Other specified deforming dorsopathies, cervicothoracic region
M43.8x4	Other specified deforming dorsopathies, thoracic region
M43.8x5	Other specified deforming dorsopathies, thoracolumbar region
M43.8x6	Other specified deforming dorsopathies, lumbar region
M43.8x7	Other specified deforming dorsopathies, lumbosacral region
M43.8x8	Other specified deforming dorsopathies, sacral and sacrococcygeal region
M43.8x9	Other specified deforming dorsopathies, site unspecified
M43.9	Deforming dorsopathy, unspecified
M47.011	Anterior spinal artery compression syndromes, occipito-atlanto-axial region
M47.012	Anterior spinal artery compression syndromes, cervical region
M47.013	Anterior spinal artery compression syndromes, cervicothoracic region
M47.014	Anterior spinal artery compression syndromes, thoracic region
M47.015	Anterior spinal artery compression syndromes, thoracolumbar region
M47.016	Anterior spinal artery compression syndromes, lumbar region
M47.019	Anterior spinal artery compression syndromes, site unspecified
M47.021	Vertebral artery compression syndromes, occipito-atlanto-axial region
M47.022	Vertebral artery compression syndromes, cervical region
M47.029	Vertebral artery compression syndromes, site unspecified
M47.10	Other spondylosis with myelopathy, site unspecified
M47.11	Other spondylosis with myelopathy, occipito-atlanto-axial region
M47.12	Other spondylosis with myelopathy, cervical region
M47.13	Other spondylosis with myelopathy, cervicothoracic region
M47.14	Other spondylosis with myelopathy, thoracic region
M47.15	Other spondylosis with myelopathy, thoracolumbar region
M47.21	Other spondylosis with radiculopathy, occipito-atlanto-axial region
M47.22	Other spondylosis with radiculopathy, cervical region
M47.23	Other spondylosis with radiculopathy, cervicothoracic region

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
M47.24	Other spondylosis with radiculopathy, thoracic region
M47.25	Other spondylosis with radiculopathy, thoracolumbar region
M48.00	Spinal stenosis, site unspecified
M48.01	Spinal stenosis, occipito-atlanto-axial region
M48.02	Spinal stenosis, cervical region
M48.03	Spinal stenosis, cervicothoracic region
M48.04	Spinal stenosis, thoracic region
M48.05	Spinal stenosis, thoracolumbar region
M48.061	Spinal stenosis, lumbar region without neurogenic claudication
M48.062	Spinal stenosis, lumbar region with neurogenic claudication
M48.07	Spinal stenosis, lumbosacral region
M48.08	Spinal stenosis, sacral and sacrococcygeal region
M50.00	Cervical disc disorder with myelopathy, unspecified cervical region
M50.01	Cervical disc disorder with myelopathy, high cervical region
M50.020	Cervical disc disorder with myelopathy, mid-cervical region, unspecified level
M50.021	Cervical disc disorder at C4-C5 level with myelopathy
M50.022	Cervical disc disorder at C5-C6 level with myelopathy
M50.023	Cervical disc disorder at C6-C7 level with myelopathy
M50.03	Cervical disc disorder with myelopathy, cervicothoracic region
M50.10	Cervical disc disorder with radiculopathy, unspecified cervical region
M50.11	Cervical disc disorder with radiculopathy, high cervical region
M50.120	Mid-cervical disc disorder, unspecified
M50.121	Cervical disc disorder at C4-C5 level with radiculopathy
M50.122	Cervical disc disorder at C5-C6 level with radiculopathy
M50.123	Cervical disc disorder at C6-C7 level with radiculopathy
M50.13	Cervical disc disorder with radiculopathy, cervicothoracic region
M50.20	Other cervical disc displacement, unspecified cervical region
M50.21	Other cervical disc displacement, high cervical region
M50.220	Other cervical disc displacement, mid-cervical region, unspecified level
M50.221	Other cervical disc displacement at C4-C5 level
M50.222	Other cervical disc displacement at C5-C6 level
M50.223	Other cervical disc displacement at C6-C7 level
M50.23	Other cervical disc displacement, cervicothoracic region
M50.30	Other cervical disc degeneration, unspecified cervical region
M50.31	Other cervical disc degeneration, high cervical region
M50.320	Other cervical disc degeneration, mid-cervical region, unspecified level
M50.321	Other cervical disc degeneration at C4-C5 level
M50.322	Other cervical disc degeneration at C5-C6 level
M50.323	Other cervical disc degeneration at C6-C7 level

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
M50.33	Other cervical disc degeneration, cervicothoracic region
M50.81	Other cervical disc disorders, high cervical region
M50.821	Other cervical disc disorders at C4-C5 level
M50.822	Other cervical disc disorders at C5-C6 level
M50.823	Other cervical disc disorders at C6-C7 level
M50.83	Other cervical disc disorders, cervicothoracic region
M51.04	Intervertebral disc disorders with myelopathy, thoracic region
M51.05	Intervertebral disc disorders with myelopathy, thoracolumbar region
M51.06	Intervertebral disc disorders with myelopathy, lumbar region
M51.14	Intervertebral disc disorders with radiculopathy, thoracic region
M51.15	Intervertebral disc disorders with radiculopathy, thoracolumbar region
M51.16	Intervertebral disc disorders with radiculopathy, lumbar region
M51.17	Intervertebral disc disorders with radiculopathy, lumbosacral region
M51.24	Other intervertebral disc displacement, thoracic region
M51.25	Other intervertebral disc displacement, thoracolumbar region
M51.26	Other intervertebral disc displacement, lumbar region
M51.27	Other intervertebral disc displacement, lumbosacral region
M51.34	Other intervertebral disc degeneration, thoracic region
M51.35	Other intervertebral disc degeneration, thoracolumbar region
M51.36	Other intervertebral disc degeneration, lumbar region
M51.37	Other intervertebral disc degeneration, lumbosacral region
M51.9	Unspecified thoracic, thoracolumbar and lumbosacral intervertebral disc disorder
M53.0	Cervicocranial syndrome
M53.1	Cervicobrachial syndrome
M54.2	Cervicalgia
M54.11	Radiculopathy, occipito-atlanto-axial region
M54.12	Radiculopathy, cervical region
M54.13	Radiculopathy, cervicothoracic region
M54.14	Radiculopathy, thoracic region
M54.15	Radiculopathy, thoracolumbar region
M54.16	Radiculopathy, lumbar region
M54.17	Radiculopathy, lumbosacral region
M96.0	Pseudarthrosis after fusion or arthrodesis
M96.1	Postlaminectomy syndrome, not elsewhere classified
M96.2	Postradiation kyphosis
M96.3	Postlaminectomy kyphosis
M96.4	Postsurgical lordosis
M96.5	Postradiation scoliosis



## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
M99.20	Subluxation stenosis of neural canal of head region
M99.21	Subluxation stenosis of neural canal of cervical region
M99.22	Subluxation stenosis of neural canal of thoracic region
M99.23	Subluxation stenosis of neural canal of lumbar region
M99.24	Subluxation stenosis of neural canal of sacral region
M99.25	Subluxation stenosis of neural canal of pelvic region
M99.26	Subluxation stenosis of neural canal of lower extremity
M99.27	Subluxation stenosis of neural canal of upper extremity
M99.28	Subluxation stenosis of neural canal of rib cage
M99.29	Subluxation stenosis of neural canal of abdomen and other regions
M99.30	Osseous stenosis of neural canal of head region
M99.31	Osseous stenosis of neural canal of cervical region
M99.32	Osseous stenosis of neural canal of thoracic region
M99.33	Osseous stenosis of neural canal of lumbar region
M99.34	Osseous stenosis of neural canal of sacral region
M99.35	Osseous stenosis of neural canal of pelvic region
M99.36	Osseous stenosis of neural canal of lower extremity
M99.37	Osseous stenosis of neural canal of upper extremity
M99.38	Osseous stenosis of neural canal of rib cage
M99.39	Osseous stenosis of neural canal of abdomen and other regions
M99.40	Connective tissue stenosis of neural canal of head region
M99.41	Connective tissue stenosis of neural canal of cervical region
M99.42	Connective tissue stenosis of neural canal of thoracic region
M99.43	Connective tissue stenosis of neural canal of lumbar region
M99.44	Connective tissue stenosis of neural canal of sacral region
M99.45	Connective tissue stenosis of neural canal of pelvic region
M99.46	Connective tissue stenosis of neural canal of lower extremity
M99.47	Connective tissue stenosis of neural canal of upper extremity
M99.48	Connective tissue stenosis of neural canal of rib cage
M99.49	Connective tissue stenosis of neural canal of abdomen and other regions
M99.50	Intervertebral disc stenosis of neural canal of head region
M99.51	Intervertebral disc stenosis of neural canal of cervical region
M99.52	Intervertebral disc stenosis of neural canal of thoracic region
M99.53	Intervertebral disc stenosis of neural canal of lumbar region
M99.54	Intervertebral disc stenosis of neural canal of sacral region
M99.55	Intervertebral disc stenosis of neural canal of pelvic region
M99.56	Intervertebral disc stenosis of neural canal of lower extremity
M99.57	Intervertebral disc stenosis of neural canal of upper extremity
M99.58	Intervertebral disc stenosis of neural canal of rib cage

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
M99.59	Intervertebral disc stenosis of neural canal of abdomen and other regions
M99.60	Osseous and spondylolytic stenosis of intervertebral foramina of head region
M99.61	Osseous and spondylolytic stenosis of intervertebral foramina of cervical region
M99.62	Osseous and spondylolytic stenosis of intervertebral foramina of thoracic region
M99.63	Osseous and spondylolytic stenosis of intervertebral foramina of lumbar region
M99.64	Osseous and spondylolytic stenosis of intervertebral foramina of sacral region
M99.65	Osseous and spondylolytic stenosis of intervertebral foramina of pelvic region
M99.66	Osseous and spondylolytic stenosis of intervertebral foramina of lower extremity
M99.67	Osseous and spondylolytic stenosis of intervertebral foramina of upper extremity
M99.68	Osseous and spondylolytic stenosis of intervertebral foramina of rib cage
M99.69	Osseous and spondylolytic stenosis of intervertebral foramina of abdomen and other regions
M99.70	Connective tissue and disc stenosis of intervertebral foramina of head region
M99.71	Connective tissue and disc stenosis of intervertebral foramina of cervical region
M99.72	Connective tissue and disc stenosis of intervertebral foramina of thoracic region
M99.73	Connective tissue and disc stenosis of intervertebral foramina of lumbar region
M99.74	Connective tissue and disc stenosis of intervertebral foramina of sacral region
M99.75	Connective tissue and disc stenosis of intervertebral foramina of pelvic region
M99.76	Connective tissue and disc stenosis of intervertebral foramina of lower extremity
M99.77	Connective tissue and disc stenosis of intervertebral foramina of upper extremity
M99.78	Connective tissue and disc stenosis of intervertebral foramina of rib cage
M99.79	Connective tissue and disc stenosis of intervertebral foramina of abdomen and other regions
P11.5	Birth injury to spine and spinal cord
Q05.4	Unspecified spina bifida with hydrocephalus
Q05.8	Sacral spina bifida without hydrocephalus
Q05.9	Spina bifida, unspecified
Q07.00	Arnold-Chiari syndrome without spina bifida or hydrocephalus
Q07.01	Arnold-Chiari syndrome with spina bifida
Q07.02	Arnold-Chiari syndrome with hydrocephalus
Q07.03	Arnold-Chiari syndrome with spina bifida and hydrocephalus
Q27.9	Congenital malformation of peripheral vascular system, unspecified
Q28.2	Arteriovenous malformation of cerebral vessels
Q28.3	Other malformations of cerebral vessels
Q85.00	Neurofibromatosis, unspecified

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
S12.000A	Unspecified displaced fracture of first cervical vertebra, initial encounter for closed fracture
S12.000B	Unspecified displaced fracture of first cervical vertebra, initial encounter for open fracture
S12.001A	Unspecified nondisplaced fracture of first cervical vertebra, initial encounter for closed fracture
S12.001B	Unspecified nondisplaced fracture of first cervical vertebra, initial encounter for open fracture
S12.100A	Unspecified displaced fracture of second cervical vertebra, initial encounter for closed fracture
S12.100B	Unspecified displaced fracture of second cervical vertebra, initial encounter for open fracture
S12.101A	Unspecified nondisplaced fracture of second cervical vertebra, initial encounter for closed fracture
S12.101B	Unspecified nondisplaced fracture of second cervical vertebra, initial encounter for open fracture
S12.200A	Unspecified displaced fracture of third cervical vertebra, initial encounter for closed fracture
S12.200B	Unspecified displaced fracture of third cervical vertebra, initial encounter for open fracture
S12.201A	Unspecified nondisplaced fracture of third cervical vertebra, initial encounter for closed fracture
S12.201B	Unspecified nondisplaced fracture of third cervical vertebra, initial encounter for open fracture
S12.300A	Unspecified displaced fracture of fourth cervical vertebra, initial encounter for closed fracture
S12.300B	Unspecified displaced fracture of fourth cervical vertebra, initial encounter for open fracture
S12.301A	Unspecified nondisplaced fracture of fourth cervical vertebra, initial encounter for closed fracture
S12.301B	Unspecified nondisplaced fracture of fourth cervical vertebra, initial encounter for open fracture
S12.9xxA	Fracture of neck, unspecified, initial encounter
S14.101A	Unspecified injury at C1 level of cervical spinal cord, initial encounter
S14.102A	Unspecified injury at C2 level of cervical spinal cord, initial encounter
S14.103A	Unspecified injury at C3 level of cervical spinal cord, initial encounter
S14.104A	Unspecified injury at C4 level of cervical spinal cord, initial encounter
S14.109A	Unspecified injury at unspecified level of cervical spinal cord, initial encounter
S14.111A	Complete lesion at C1 level of cervical spinal cord, initial encounter

**MEDICAL POLICY**

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
S14.112A	Complete lesion at C2 level of cervical spinal cord, initial encounter
S14.113A	Complete lesion at C3 level of cervical spinal cord, initial encounter
S14.114A	Complete lesion at C4 level of cervical spinal cord, initial encounter
S14.2xxA	Injury of nerve root of cervical spine, initial encounter
S22.009A	Unspecified fracture of unspecified thoracic vertebra, initial encounter for closed fracture
S22.019A	Unspecified fracture of first thoracic vertebra, initial encounter for closed fracture
S22.019B	Unspecified fracture of first thoracic vertebra, initial encounter for open fracture
S22.029A	Unspecified fracture of second thoracic vertebra, initial encounter for closed fracture
S22.029B	Unspecified fracture of second thoracic vertebra, initial encounter for open fracture
S22.039A	Unspecified fracture of third thoracic vertebra, initial encounter for closed fracture
S22.039B	Unspecified fracture of third thoracic vertebra, initial encounter for open fracture
S22.049A	Unspecified fracture of fourth thoracic vertebra, initial encounter for closed fracture
S22.049B	Unspecified fracture of fourth thoracic vertebra, initial encounter for open fracture
S22.059A	Unspecified fracture of T5-T6 vertebra, initial encounter for closed fracture
S22.059B	Unspecified fracture of T5-T6 vertebra, initial encounter for open fracture
S24.101A	Unspecified injury at T1 level of thoracic spinal cord, initial encounter
S24.102A	Unspecified injury at T2-T6 level of thoracic spinal cord, initial encounter
S24.109A	Unspecified injury at unspecified level of thoracic spinal cord, initial encounter
S32.009A	Unspecified fracture of unspecified lumbar vertebra, initial encounter for closed fracture
S32.009B	Unspecified fracture of unspecified lumbar vertebra, initial encounter for open fracture
S32.019A	Unspecified fracture of first lumbar vertebra, initial encounter for closed fracture
S32.019B	Unspecified fracture of first lumbar vertebra, initial encounter for open fracture
S32.029A	Unspecified fracture of second lumbar vertebra, initial encounter for closed fracture
S32.029B	Unspecified fracture of second lumbar vertebra, initial encounter for open fracture
S32.039A	Unspecified fracture of third lumbar vertebra, initial encounter for closed fracture
S32.039B	Unspecified fracture of third lumbar vertebra, initial encounter for open fracture

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

<b>ICD-10-CM Diagnosis Codes</b>	<b>Description</b>
S32.049A	Unspecified fracture of fourth lumbar vertebra, initial encounter for closed fracture
S32.049B	Unspecified fracture of fourth lumbar vertebra, initial encounter for open fracture
S32.059A	Unspecified fracture of fifth lumbar vertebra, initial encounter for closed fracture
S32.059B	Unspecified fracture of fifth lumbar vertebra, initial encounter for open fracture
S32.10xA	Unspecified fracture of sacrum, initial encounter for closed fracture
S32.10xB	Unspecified fracture of sacrum, initial encounter for open fracture
S32.2xxB	Fracture of coccyx, initial encounter for open fracture
S34.101A	Unspecified injury to L1 level of lumbar spinal cord, initial encounter
S34.102A	Unspecified injury to L2 level of lumbar spinal cord, initial encounter
S34.103A	Unspecified injury to L3 level of lumbar spinal cord, initial encounter
S34.104A	Unspecified injury to L4 level of lumbar spinal cord, initial encounter
S34.105A	Unspecified injury to L5 level of lumbar spinal cord, initial encounter
S34.109A	Unspecified injury to unspecified level of lumbar spinal cord, initial encounter
S34.111A	Complete lesion of L1 level of lumbar spinal cord, initial encounter
S34.112A	Complete lesion of L2 level of lumbar spinal cord, initial encounter
S34.113A	Complete lesion of L3 level of lumbar spinal cord, initial encounter
S34.114A	Complete lesion of L4 level of lumbar spinal cord, initial encounter
S34.115A	Complete lesion of L5 level of lumbar spinal cord, initial encounter
S34.119A	Complete lesion of unspecified level of lumbar spinal cord, initial encounter
S34.121A	Incomplete lesion of L1 level of lumbar spinal cord, initial encounter
S34.122A	Incomplete lesion of L2 level of lumbar spinal cord, initial encounter
S34.123A	Incomplete lesion of L3 level of lumbar spinal cord, initial encounter
S34.124A	Incomplete lesion of L4 level of lumbar spinal cord, initial encounter
S34.125A	Incomplete lesion of L5 level of lumbar spinal cord, initial encounter
S34.129A	Incomplete lesion of unspecified level of lumbar spinal cord, initial encounter
S34.139A	Unspecified injury to sacral spinal cord, initial encounter
S44.30xA	Injury of axillary nerve, unspecified arm, initial encounter
S44.31xA	Injury of axillary nerve, right arm, initial encounter
S44.32xA	Injury of axillary nerve, left arm, initial encounter
S74.00xA	Injury of sciatic nerve at hip and thigh level, unspecified leg, initial encounter

## IX. REFERENCES

[TOP](#)

1. American Academy of Neurology. Assessment: intraoperative neurophysiology. Report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology. *Neurology*. Nov 1990; 40(11):1644-1646. PMID 2234418.

**MEDICAL POLICY**

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

2. Nuwer MR, Emerson RG, Galloway G, et al. Evidence-based guideline update: intraoperative spinal monitoring with somatosensory and transcranial electrical motor evoked potentials: report of the Therapeutics and Technology Assessment Subcommittee of the American Academy of Neurology and the American Clinical Neurophysiology Society. *Neurology*. Feb 21 2012; 78(8):585-589. PMID 22351796.
3. Skinner SA, Cohen BA, Morledge DE, et al. Practice guidelines for the supervising professional: intraoperative neurophysiological monitoring. *J Clin Monit Comput*. Apr 2014; 28(2):103-111. PMID 24022172.
4. American Clinical Neurophysiology Society. ACNS Guidelines and Consensus Statements. 2009;. Accessed April 12, 2022.
5. American Association of Neurological Surgeons (AANS)/Congress of Neurological Surgeons (CNS). AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves Updated Position Statement: Intraoperative electrophysiological monitoring. January 2018. Accessed April 12, 2022.
6. Resnick DK, Choudhri TF, Dailey AT, et al. Guidelines for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 15: electrophysiological monitoring and lumbar fusion. *J Neurosurg Spine*. Jun 2005; 2(6):725-732. PMID 16028743.
7. American Association of Neuromuscular & Electrodiagnostic Medicine. Position Statement: Recommended Policy for Electrodiagnostic Medicine. 2019; Accessed April 13, 2022.
8. Henry BM, Graves MJ, Vikse J, et al. The current state of intermittent intraoperative neural monitoring for prevention of recurrent laryngeal nerve injury during thyroidectomy: a PRISMA-compliant systematic review of overlapping meta-analyses. *Langenbecks Arch Surg*. Jun 2017; 402(4):663-673. PMID 28378238.
9. Pisanu A, Porceddu G, Podda M, et al. Systematic review with meta-analysis of studies comparing intraoperative neuromonitoring of recurrent laryngeal nerves versus visualization alone during thyroidectomy. *J Surg Res*. May 1 2014; 188(1):152-161. PMID 24433869.
10. Sun W, Liu J, Zhang H, et al. A meta-analysis of intraoperative neuromonitoring of recurrent laryngeal nerve palsy during thyroid reoperations. *Clin Endocrinol (Oxf)*. Nov 2017; 87(5):572-580. PMID 28585717.
11. Pardal-Refoyo JL, Ochoa-Sangrador C. Bilateral recurrent laryngeal nerve injury in total thyroidectomy with or without intraoperative neuromonitoring. Systematic review and meta-analysis. *Acta Otorrinolaringol Esp*. Mar-Apr 2016; 67(2):66-74. PMID 26025358.
12. Barczynski M, Konturek A, Cichon S. Randomized clinical trial of visualization versus neuromonitoring of recurrent laryngeal nerves during thyroidectomy. *Br J Surg*. Mar 2009; 96(3):240-246. PMID 19177420.
13. Vasileiadis I, Karatzas T, Charitoudis G, et al. Association of intraoperative neuromonitoring with reduced recurrent laryngeal nerve injury in patients undergoing total thyroidectomy. *JAMA Otolaryngol Head Neck Surg*. Oct 1 2016; 142(10):994-1001. PMID 27490310.
14. Ajiboye RM, Zoller SD, Sharma A, et al. Intraoperative neuromonitoring for anterior cervical spine surgery: What is the evidence? *Spine (Phila Pa 1976)*. Mar 15 2017; 42(6):385-393. PMID 27390917.

**MEDICAL POLICY**

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

15. Erwood MS, Hadley MN, Gordon AS, et al. Recurrent laryngeal nerve injury following reoperative anterior cervical discectomy and fusion: a meta-analysis. *J Neurosurg Spine*. Aug 2016; 25(2):198-204. PMID 27015129.
16. Daniel JW, Botelho RV, Milano JB, et al. Intraoperative Neurophysiological Monitoring in Spine Surgery: A Systematic Review and Meta-Analysis. *Spine (Phila Pa 1976)*. 2018 Aug; 43(16):1154-1160. PMID: 30063222.
17. Zhong D, Zhou Y, Li Y, et al. Intraoperative recurrent laryngeal nerve monitoring: a useful method for patients with esophageal cancer. *Dis Esophagus*. Jul 2014; 27(5):444-451. PMID 23020300.
18. Kneist W, Kauff DW, Juhre V, et al. Is intraoperative neuromonitoring associated with better functional outcome in patients undergoing open TME? Results of a case-control study. *Eur J Surg Oncol*. Sep 2013; 39(9):994-999. PMID 23810330.
19. Kneist W, Kauff DW, Rubenwolf P, et al. Intraoperative monitoring of bladder and internal anal sphincter innervation: a predictor of erectile function following low anterior rectal resection for rectal cancer? Results of a prospective clinical study. *Dig Surg*. Feb 2013; 30(4-6):459-465. PMID 24481247.
20. Clarkson JH, Ozyurekoglu T, Mujadzic M, et al. An evaluation of the information gained from the use of intraoperative nerve recording in the management of suspected brachial plexus root avulsion. *Plast Reconstr Surg*. Mar 2011; 127(3):1237-1243. PMID 21364425.
21. Zhang W, Chen M, Zhang W, et al. Use of electrophysiological monitoring in selective rhizotomy treating glossopharyngeal neuralgia. *J Craniomaxillofac Surg*. Jul 2014; 42(5):e182-185. PMID 24095216.
22. Ochs BC, Herzka A, Yaylali I. Intraoperative neurophysiological monitoring of somatosensory evoked potentials during hip arthroscopy surgery. *Neurodiagn J*. Dec 2012; 52(4):312-319. PMID 23301281.
23. Jahangiri FR. Multimodality neurophysiological monitoring during tibial/fibular osteotomies for preventing peripheral nerve injuries. *Neurodiagn J*. Jun 2013; 53(2):153-168. PMID 23833842.
24. Nagda SH, Rogers KJ, Sestokas AK, et al. Neer Award 2005: Peripheral nerve function during shoulder arthroplasty using intraoperative nerve monitoring. *J Shoulder Elbow Surg*. May-Jun 2007; 16(3 Suppl):S2-8. PMID 17493556.
25. Sharan A, Groff MW, Dailey AT, et al. Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 15: electrophysiological monitoring and lumbar fusion. *J Neurosurg Spine*. Jul 2014; 21(1):102-105. PMID 24980592.
26. American Clinical Neurophysiology Society. Guideline 11A: Recommended Standards for Neurophysiologic Intraoperative Monitoring Principles. 2009; Accessed April 13, 2022
27. American Academy of Neurology. Model Coverage Policy: Principles of Coding for Intraoperative Neurophysiologic Monitoring (IOM) and Testing. August 2018; Accessed April 13, 2022.
28. Gertsch JH, Moreira JJ, Lee GR, et al. Practice guidelines for the supervising professional: intraoperative neurophysiological monitoring. *J Clin Monit Comput*. 2018 Oct 30. PMID: 30063222.

## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

29. Macdonald DB, Skinner S, Shils J, et al. Intraoperative motor evoked potential monitoring - A position statement by the American Society of Neurophysiological Monitoring. *Clin Neurophysiol.* Dec 2013; 124(12):2291-2316. PMID 24055297.
30. National Institute for Health and Care Excellence (NICE). Intraoperative nerve monitoring during thyroid surgery [IPG255]. 2008; Accessed July 12, 2023.
31. Centers for Medicare & Medicaid Services. National Coverage Determination (NCD) for Electroencephalographic Monitoring During Surgical Procedures Involving the Cerebral Vasculature (160.8). 2006. Accessed April 13, 2022.
32. Centers for Medicare & Medicaid Services. Billing Medicare for Remote Intraoperative Neurophysiology Monitoring in CY 2013. 2012; Accessed April 13, 2022.
33. Jashek-Ahmed F, Cabrilo I, Bal J, et al. Intraoperative monitoring of visual evoked potentials in patients undergoing transsphenoidal surgery for pituitary adenoma: a systematic review. *BMC Neurol.* 2021;21(1):287. Published 2021 Jul 23. doi:10.1186/s12883-021-02315-4
34. Blue Cross Blue Shield Association Medical Policy Reference Manual 7.01.58, Intraoperative Neurophysiologic Monitoring (Sensory-Evoked Potentials, Motor-Evoked Potentials, EEG Monitoring) May 2023.

### X. POLICY HISTORY

[TOP](#)

<b>MP 2.030</b>	<b>CAC 2/24/04</b>
	<b>CAC 10/26/04</b>
	<b>CAC 11/29/05</b>
	<b>CAC 11/28/06</b>
	<b>CAC 11/27/07</b>
	<b>CAC 11/25/08</b>
	<b>CAC 9/29/09</b> Policy statement unchanged. References updated.
	<b>CAC 11/30/10</b> Consensus Review
	<b>CAC 11/22/11</b> Minor Revision. Policy statements changed to indicate motor-evoked potentials using transcranial electrical stimulation may be considered medically necessary and motor-evoked potential using transcranial magnetic stimulation is investigational. Description and Background section extensively revised per BCBSA update. Medicare variation revised to include all individual indications as per LCD and NCD. FEP variation added.
	<b>2013 Codes</b> added-12/20/2013
	<b>04/04/2013-</b> Policy coded
	<b>6/4/13 CAC-</b> Consensus: No change to policy statements. References updated. FEP variation changed to reference MP-7.01.58 Intraoperative Neurophysiologic Monitoring. Administrative code review complete.
	<b>CAC 3/25/14</b> Consensus review. References updated. No changes to the policy statements.



## MEDICAL POLICY

<b>POLICY TITLE</b>	<b>INTRAOPERATIVE NEUROPHYSIOLOGIC MONITORING (SENSORY-EVOKED POTENTIALS, MOTOR-EVOKED POTENTIALS, EEG MONITORING)</b>
<b>POLICY NUMBER</b>	<b>MP-2.030</b>

	<b>CAC 3/24/15</b> Consensus review. References updated. Rationale added. No change to policy statements. Codes unranged.
	<b>11/2/15</b> Administrative change. LCD number changed from L27499 to L35003 due to Novitas update to ICD-10.
	<b>CAC 3/29/16</b> Consensus review. No changes to the policy statements. Background, references and rationale updated. Coding reviewed.
	<b>Administrative Update 8/24/16</b> Added omitted codes 95928, 95929, & 95939 for central motor evoked potential studies (transcranial motor stimulation).
	<b>Admin update 1/1/17:</b> Product variation section reformatted. New Diagnosis codes added effective 10/1/16
	<b>Admin update 10/1/17:</b> Added new ICD10 codes effective from 10/1/17 and deleted old ICD 10 codes.
	<b>1/1/18 Admin Update:</b> Medicare variations removed from Commercial Policies.
	<b>12/21/17</b> Minor revision. Intraoperative monitoring is considered medically necessary for high risk thyroid and anterior cervical spine surgeries. Policy Guidelines section added. Cross-References, Description/Background, Rationale and Reference sections updated. Coding reviewed.
	<b>1/7/19</b> Consensus review. No change to policy statements. References updated. Rationale condensed.
	<b>12/31/19</b> Consensus review. No change to policy statements. References updated. Coding reviewed.
	<b>12/01/2020-</b> Administrative Review. Deleted 2021 codes removed from policy.
	<b>12/21/2020-</b> Consensus review. No change to policy statements. References updated. Coding reviewed.
	<b>08/05/2021 Consensus Review.</b> No change to policy statement. References and coding reviewed.
	<b>4/13/2022 Consensus review.</b> No changes to policy statement. Updated FEP, rationale, references. Added code 95930 as INV.
	<b>9/2/2022 Administrative update.</b> Added 26 new ICD-10 codes, deleted 7 ICD-10 codes. Effective date 10/1/2022.
	<b>7/13/2023 Consensus Review.</b> No changes to policy statement. Cross-references, background and rationale updated. Coding reviewed, no changes.
	<b>9/8/2023 Admin Update.</b> ICD 10 codes revised, effective 10/1/2023.

[TOP](#)

*Health care benefit programs issued or administered by Capital Blue Cross and/or its subsidiaries, Capital Advantage Insurance Company®, Capital Advantage Assurance Company® and Keystone Health Plan® Central. Independent licensees of the Blue Cross BlueShield Association. Communications issued by Capital Blue Cross in its capacity as administrator of programs and provider relations for all companies.*