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MP.087.MPC – Intraoperative Neurophysiological Testing

Maryland Physicians Care considers **Intraoperative Neurophysiological Testing** medically necessary for the following indications:

- Surgery of the aortic arch, its branch vessels, or thoracic aorta, including carotid artery surgery, when there is a risk of cerebral or spinal cord ischemia
- Resection of epileptogenic brain tissue or tumor
- Resection of brain tissue close to the primary motor cortex and requiring brain mapping
- Protection of cranial nerves associated with any of the following:
    a. Tumors that affect optic, trigeminal, facial, auditory nerves
    b. Cavernous sinus tumors
    c. Microvascular decompression of cranial nerves
    d. Skull base surgery in the vicinity of the cranial nerves and surgeries of the foramen magnum
    e. Oval or round window graft
    f. Laryngeal nerve for thyroid surgeries
- Endolymphatic shunt for Meniere's disease
- Vestibular section for vertigo
- Correction of scoliosis or deformity of spinal cord involving traction on the cord
- Protection of spinal cord where work is performed in close proximity to cord as in the placement or removal of hardware or where there have been numerous interventions
- Spinal instrumentation requiring pedicle screws or distraction
- Decompression procedures on the spinal cord or cauda equine carried out for myelopathy or claudication where function of spinal cord or spinal nerves is at risk
- Spinal cord tumors and spinal fractures (with risk of cord compression)
- Neuromas of peripheral nerves of brachial plexus, when there is risk to major sensory or motor nerves
- Surgery or embolization for intracranial arteriovenous malformations
- Surgery for arteriovenous malformation of spinal cord
- Embolization of bronchial artery arteriovenous malformations for tumors
- Cerebral vascular aneurysms
- Surgery for intractable movement disorders
- Arteriography, during which there is a test occlusion of the carotid artery

- Circulatory arrest with hypothermia (does not include surgeries performed under circulatory bypass (e.g., coronary artery bypass grafting (CABG), ventricular aneurysms)
- Distal aortic procedures, where there is risk of ischemia to spinal cord
- Leg lengthening procedures, where there is traction on sciatic nerve or other nerve trunks
- Basal ganglia movement disorders
- Surgery as a result of traumatic injury to spinal cord/brain
- Deep brain stimulation

Limitations

- The test must be requested by the operating surgeon and the monitoring must be performed by a clinically trained neurophysiologist (MD/DO) other than the operating surgeon, the surgical assistant, or the anesthesiologist rendering the anesthesia due to the high potential for morbidity.
    - *Claims submission must include documentation for the time devoted to direct monitoring of the patient (time may be cumulative)*
- A technologist must be present continuously in the operating suite recording and monitoring a single case under the neurophysiologist's supervision. This technologist must have either the physical or electronic capacity for real-time communication with the supervising neurophysiologist
- The surgical team and the monitoring staff must always be able to be in immediate contact with each other.
- Services must be performed in the inpatient setting only.
- Intraoperative monitoring is not medically necessary in situations where historical data and current practices reveal no potential risk to neural integrity during surgery.
- For coverage of remote monitoring (as mentioned above) the neurophysiologist must have immediate physical or real-time communication with the operating room. He/she must have the ability to watch the tracings as they are obtained in real-time in the operating room as well as the baseline electrophysiological test and the monitoring tracings from earlier in the case.
- The monitoring physician must have a plan in place to transfer care to another physician, should any other situation arise during patient monitoring.
- Technical criteria – it is mandatory that at least 8 recording channels 16 if EEG is monitored) be available for all Intraoperative neurophysiological monitoring (IONM). The equipment utilized must also provide for all of the monitoring modalities that are needed such as auditory-evoked response,

electroencephalography/electrocorticography, electromyography/nerve conduction, and somatosensory-evoked response.

- IONM during thyroid surgery is considered reasonable and necessary if the monitoring service adheres to the essential standards described above, and the surgical procedure involves the high-risk total removal of a complete lobe of the thyroid, removal of the entire gland, or involves re-entry (re-operation) to a prior surgical field where scar tissue obscures the visual path of the recurrent laryngeal nerve. The Contractor reserves the right to remove coverage for monitoring during thyroid surgery if the literature ultimately does not support this monitoring.

Background

The Centers for Medicare and Medicaid Services (CMS) provides an overview on Intraoperative neurophysiological testing (IONT), stating that it may be used to identify/prevent complications during surgery on the nervous system, its blood supply, or adjacent tissue. Monitoring can identify new neurologic impairment, identify or separate nervous system structures (e.g., around or in a tumor) and can demonstrate which tracts or nerves are still functional.

Intraoperative neurophysiological testing may provide relative reassurance to the surgeon that no identifiable complication has been detected up to a certain point, allowing the surgeon to proceed further and provide a more thorough or careful surgical intervention than would have been provided in the absence of monitoring. Monitoring, if used to assess sensory or motor pathways, should assess the appropriate sensory or motor pathways. Incorrect pathway monitoring could miss detection of neural compromise and has been shown to have resulted in adverse outcomes.

Codes:

CPT Codes / HCPCS Codes / ICD-10 Codes	
Code	Description
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 and in conjunction with the study performed)
HCPCS codes covered if selection criteria are met (If Appropriate):	
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.
ICD-10 codes covered if selection criteria are met:	
C41.2	Malignant neoplasm of vertebral column
C70.0-C70.9	Malignant neoplasm of meninges
C72.0-C72.9	Malignant neoplasm of spinal cord, cranial nerves, and other parts of central nervous system
C73	Malignant neoplasm of thyroid gland
C79.3-C79.49	Secondary malignant neoplasm of brain and other parts of nervous system
D21.0	Benign neoplasm of connective and other soft tissue of head, face, and neck
D32.0-D33.9	Benign neoplasm for meninges, brain, and other parts of central nervous system
D42.0-D42.9	Neoplasm of uncertain behavior of meninges
D43.0-D43.9	Neoplasm of uncertain behavior of brain and central nervous system
D44.3-D44.7	Neoplasm of uncertain behavior of pituitary, craniopharyngeal, and pineal glands-Neoplasm of uncertain behavior of carotid body, aortic body, and other paraganglia
D49.6	Neoplasm of unspecified behavior of brain
E07.89-E7.9	Other specified or unspecified disorders of thyroid
G06.1	Intraspinal abscess and granuloma
G40.111-G40.119; G40.211-G40.219	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple/complex partial seizures, intractable with or with status epileptics
G45.0	Vertebro-basilar artery syndrome
G45.1	Carotid artery syndrome (hemispheric)
G45.8	Other transient cerebral ischemic attacks and related syndromes
G45.9	Transient cerebral ischemic attack, unspecified
G46.0-G46.2	Vascular syndromes of brain in cerebrovascular-middle, anterior, and posterior cerebral artery
G50.0	Trigeminal neuralgia

G50.1	Atypical facial pain
G52.0-G52.9	Disorders of cranial nerves
G53	Cranial nerve disorders in diseases classified elsewhere
G54.0	Brachial plexus disorders
G54.1	Lumbosacral plexus disorders
G54.2	Cervical root disorders, not elsewhere classified
G54.3	Thoracic root disorders, not elsewhere classified
G54.4	Lumbosacral root disorders, not elsewhere classified
G80.4	Ataxic cerebral palsy
G80.8	Other cerebral palsy
G80.9	Cerebral palsy, unspecified
G93.5	Compression of brain
G95.0	Syringomyelia and syringobulbia
H71.00-H71.93	Cholesteatoma of middle ear
H74.40-H74.43	Polyp of middle ear
H83.11-H83.19	Labyrinthine fistula
I60.00-I60.9	Nontraumatic subarachnoid hemorrhage
I61.0-I61.9	Nontraumatic intracerebral hemorrhage
I62.00-I62.9	Nontraumatic subdural hemorrhage
I63.00-I63.9	Cerebral infarction
I65.01-I65.9	Occlusion and stenosis of precerebral arteries, not resulting in cerebral infarction
I66.01-I66.9	Occlusion and stenosis of cerebral arteries, not resulting in cerebral infraction
I67.0	Dissection of cerebral arteries, nonruptured
I67.1	Cerebral aneurysm, nonruptured
I67.5	Moyamoya disease
I67.841	Reversible cerebrovascular vasoconstriction syndrome
I67.848	Other cerebrovascular vasospasm and vasoconstriction
I71.00	Dissection of unspecified site of aorta

I71.01	Dissection of thoracic aorta
I72.02	Dissection of abdominal aorta
I71.03	Dissection of thoracoabdominal aorta
I71.1	Thoracic aortic aneurysm, ruptured
I71.2	Thoracic aortic aneurysm, without rupture
I71.3	Abdominal aortic aneurysm, ruptured
I71.4	Abdominal aortic aneurysm, without rupture
I71.5	Thoracoabdominal aortic aneurysm, rupture
I71.6	Thoracoabdominal aortic aneurysm, 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
I77.74	Dissection of vertebral artery
I77.79	Dissection of other artery
I79.0	Dissection of other artery
M40.00-M40.05	Postural kyphosis
M40.10-M40.15	Other secondary kyphosis
M40.202-M40.209	Unspecified kyphosis
M40.292-M40.299	Other kyphosis
M40.30-M40.37	Flatback syndrome
M40.40-M40.47	Postural lordosis
M40.50-M40.57	Lordosis, unspecified
M41.00-M41.9	Scoliosis
M43.8X1-M43.8X9	Other specified deforming dorsopathies
M47.011-M47.029	Anterior spinal and vertebral artery compression syndromes-Vertebral artery compression syndromes
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

M48.00-M48.08	Spinal stenosis
M50.00-M50.03	Cervical disc disorder with myelopathy-
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
M51.9	Unspecified thoracic, thoracolumbar and lumbosacral intervertebral disc disorder
M96.2	Postradiation kyphosis
M96.3	Postlaminectomy kyphosis
M96.4	Postsurgical lordosis
M96.5	Postradiation scoliosis
P11.3	Birth injury to facial nerve
P11.5	Birth injury to spine and spinal cord
P14.0	Erb's paralysis due to birth injury
P14.1	Klumpke's paralysis due to birth injury
P14.3	Other brachial plexus birth injuries
P14.8	Birth injuries to other parts of peripheral nervous system
P14.9	Birth injury to peripheral nervous system, unspecified
Q05.0	Cervical spinda bifida with hydrocephalus
Q05.1	Thoracic spina bifida with hydrocephalus
Q05.2	Lumbar spina bifida with hydrocephalus
Q05.3	Sacral spina bifida with hydrocephalus
Q05.4	Unspecified spina bifida with hydrocephalus
Q05.5-Q05.9	Cervical, thoracic, lumbar, sacral, and unspecified spinal bifida without hydrocephalus
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
Q85.0-Q85.09	Neurofibromatosis
S06.0X6A	Concussion with loss of consciousness greater than 24 hours with return to pre-existing conscious level
S06.0X6D-S06.0X6S	Concussion with loss of consciousness without return to pre-existing conscious level (greater than 24 hours)
S12.000A-S12.9XXS	Fracture of cervical vertebra and other parts of neck
S14.0XXA-S14.9XXS	Injury of nerves and spinal cord at neck level
S22.000A-S22.089S	Fracture of the thoracic vertebra
S24.0XXA-S24.9XXS	Injury of nerves and spinal cord at thorax level
S32.000A-S32.059S	Open/closed fractures of lumbar spine
S32.10XA-S32.2XXS	Open/closed fractures of sacrum and coccyx
S34.01XA-S34.01XS	Concussion and edema of lumbar spinal cord
S34.02XA-S34.03XS	Concussion and edema of sacral spinal cord
S34.101A-S34.129S	Injuries of lumbar spine and spinal cord
S34.131A-S34.139S	Injuries of sacral spine and spinal cord
S34.21XA-S34.9XXS	Injuries of nerve root of lumber, sacral, and unspecified nerves at abdomen
S44.00XA-S44.92XS	Injuries of nerves at shoulder and upper arm level
S54.00XA-S54.92XS	Injuries of nerves at forearm level

S64.00XA-S64.92XS	Injuries of nerves at wrist and hand level
S74.00XA-S74.92.XS	Injuries of sciatic verve and nerves at hip and thigh level
S84.00XA-S84.92XS	Injuries of nerves at lower leg level
S94.00XA-S94.92XS	Injuries of nerves at ankle and foot level

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