Subject: Intraoperative Neurophysiological Monitoring (INM)

Background: Intraoperative neurophysiological monitoring (INM) refers to various methods to monitor the strength and structure of neural pathways during high-risk surgeries. This technology is intended to identify abnormalities and prevent complications within the nervous system, along with swift intervention to avoid permanent damage. The American Association of Neuromuscular and Electrodiagnostic Medicine outlines that INM should be used to identify normal and abnormal nerve, muscle, motor, or sensory neuron, and neuromuscular joint functioning. There are many techniques used in INM including: Somatosensory-evoked potential (SSEP), Brainstem auditory-evoked potential (BAEP), Motor-evoked potential (MEP), Neuromuscular junction (NMJ), Electroencephalography (EEG), Electrocorticography (ECoG), Electromyography (EMG) with nerve conduction studies (NCS), and Visual-evoked potential (VEP). Some high-risk patients may be candidates for a surgical procedure only if monitoring is available due to the potential risks and damage to the nervous system without monitoring. Due to the potential risk for morbidity, beneficial results using INM are demonstrated with undivided attention to one unique individual at a time.

Policy and Coverage Criteria:
Harvard Pilgrim Health Care (HPHC) considers intraoperative neurophysiological monitoring with an FDA approved technique/device as medically necessary when performed during one of the following procedures and supervised and interpreted by a provider, present at the operating site or from a remote location:

Endovascular, Vascular/Cardiovascular Surgery
- Distal aortic procedures, where there is a risk of ischemia to the spinal cord
- Procedures of the aortic arch, the branch vessels, thoracic aorta, when there is risk of cerebral ischemia
- Arteriography, during which there is a test occlusion of the carotid artery
- Circulatory arrest with hypothermia

Intercranial Surgery
- Deep brain stimulation
- Resection of brain tissue close to the primary motor cortex and requiring brain mapping
- Resection of epileptogenic brain tissue or tumor
- Surgery or embolization for intracranial arteriovenous malformations
- Surgery for basal ganglia movement disorders
- Surgery requiring protection of cranial nerves including the following:
  - Surgery to correct tumors affecting the optic, trigeminal, facial or auditory nerves
  - Surgery to correct cavernous sinus tumors
  - Microvascular decompression of cranial nerves
  - Oval or round window grafts
  - Endolymphatic shunt for Meniere’s disease
  - Vestibular section for vertigo

Spine Surgery
- Correction of scoliosis or deformity of spinal cord involving traction on the cord
- Decompressive procedures on the spinal cord or cauda equina carried out for myelopathy or claudication where function of the spinal cord or spinal nerves and associated vascular supplies are at risk

HPHC Medical Policy

Intraoperative Neurophysiological Monitoring

HPHC policies are based on medical science, and written to apply to the majority of people with a given condition. Individual members’ unique clinical circumstances, and capabilities of the local delivery system are considered when making individual UM determinations.

Coverage described in this policy is standard under most HPHC plans. Specific benefits may vary by product and/or employer group. Please reference appropriate member materials (e.g. Benefit Handbook, Certificate of Coverage) for member-specific benefit information.
• Protection of the spinal cord where a procedure near the cord is taking place such as the placement or removal of old hardware or if there have been multiple procedures for the member
• Excision of spinal cord or cauda equina tumors
• Spinal instrumentation requiring pedicle screws anchoring or distraction where there is risk of injury to the spinal cord or nerve roots
• Surgery for spinal stabilization as a result of traumatic injury or disease to the spinal cord or brain
• Surgery for:
  o Intracranial AV malformations
  o Arteriovenous malformation of the spinal cord
  o Surgery for intractable movement disorders
  o Cerebral vascular aneurysms
  o Surgery for intractable movement disorders

Orthopedic Surgery
• Leg-lengthening procedures, where there is traction on the sciatic nerve or other nerve trunks

Peripheral Nerve Surgery
• Removal of neuromas of peripheral nerves of the brachial plexus, when there is a risk to major sensory or motor nerves

Exclusions: Harvard Pilgrim Health Care (HPHC) considers Intraoperative Neurophysiological Monitoring as experimental/Investigational and not medically necessary for all other indications. In addition, HPHC does not cover INM for the following:
• Non-FDA approved techniques (e.g. Motor-evoked potential (MEP) using transcranial electrical stimulation)
• Outside of hospital settings
• For individuals with no history of potential nerve damage or when the above criteria are not met

Coding:
Codes are listed below for informational purposes only, and do not guarantee member coverage or provider reimbursement. The list may not be all-inclusive. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible.

<table>
<thead>
<tr>
<th>CPT® Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>95940</td>
<td>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)</td>
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<tr>
<td>95941</td>
<td>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)</td>
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<table>
<thead>
<tr>
<th>HCPCS Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>G0453</td>
<td>Continuous intraoperative neurophysiology monitoring, from outside the operating room (remote of nearby), per patient, (attention directed exclusively to one patient) each 15 minutes (list in addition to primary procedure)</td>
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Billing Guidelines:
Member’s medical records must document that services are medically necessary for the care provided. Harvard Pilgrim Health Care maintains the right to audit the services provided to our members, regardless of the participation status of the provider. All documentation must be available to HPHC upon request. Failure to produce the requested information may result in denial or retraction of payment.

Intraoperative neurophysiology monitoring should not be reported by the physician performing the operative procedure since it is included in the global package for the surgery. The member’s medical record should document the time spent in monitoring in correlation to the surgery performed.

Time billed for INM should only be submitted for the time dedicated to monitoring. Billed time should not exceed the amount of time the member is under anesthesia which will be reflected in the medical records. The time may be cumulative but does not have to be continuous.

References:

Summary of Changes:

<table>
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<tr>
<th>Date</th>
<th>Change</th>
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<tbody>
<tr>
<td>7/22</td>
<td>Annual Review; no changes for integration purposes with Tufts Health Plan (THP)</td>
</tr>
<tr>
<td>5/21</td>
<td>Annual review; no changes</td>
</tr>
<tr>
<td>5/20</td>
<td>New Policy</td>
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Approved by Medical Policy Committee: 7/20/22
Approved by Clinical Policy Operational Committee: 7/20; 6/21; 8/22
Policy Effective Date: 9/1/22
Initiated: 5/2020