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MP.108 Deep Brain and Dorsal Column (Spinal Cord) Neurostimulators Policy

Maryland Physicians Care considers **Deep Brain and Dorsal Column (Spinal Cord) Neurostimulators** medically necessary for the following indications:

General Requirements

- The device is a Food and Drug Administration (FDA) approved device or the device is being used in accordance with FDA approved protocols governing Category B Investigational Device Exemption (IDE) DBS clinical trials.
- The patient has undergone careful screening, evaluation and diagnosis by a multidisciplinary team prior to implantation. Screening must include psychological (only for Parkinson's disease to rule out behavioral health diagnosis), and physical evaluations. *(Note: Refer to Limitation section)*
- Patient's willingness and ability to cooperate during conscious operative procedure, as well as during post-surgical evaluations, adjustments of medications, and stimulator settings.
- All the facilities, equipment, and professional and support personnel required for the proper diagnosis, treatment training, and follow up of the patient are available.

Indications by Region

Thalamic Ventralis Intermedius Nucleus (Unilateral or Bilateral)

- Essential Tremor when [1,2]:
  - Severe tremor lasting at least 3 years that impacts activities of daily living (ADL)
  - First-line medical treatments have failed to successfully control the tremor
  - Other treatable etiologies have been eliminated. These can include:
    - Hyperthyroidism
    - Hyperglycemia
    - Medication
- Parkinson Tremor when [2,3]:
  - Severe tremor lasting at least 3 years impacts ADL
  - First-line medical treatments have failed to successfully control the tremor
  - Rigidity and bradykinesia are not severe or well-controlled by medication (for severe/poorly controlled rigidity and bradykinesia, see Parkinson

Disease indications under Subthalamic Nucleus and Global Pallidus Interna)

Anterior Thalamic Nucleus

- Epilepsy when [4,5]:
  - Seizures are uncontrolled by medication, or patient cannot tolerate medication
  - Resective surgery has failed or is not possible due to location of seizure onset zone
  - Patients with multifocal seizures, or seizure onset zone cannot be localized

Subthalamic Nucleus (STN) or Globus Pallidus Interna (GPi) (Unilateral or Bilateral)

- Parkinson Disease when [6–8]:
  - Patient has been diagnosed for at least 4 years and motor difficulties (tremor, bradykinesia or rigidity) for at least 3 years OR more recently diagnosed patients with severe motor difficulties impacting activities of daily living
  - Medical treatment has failed to control the motor difficulties or there is a need to reduce dopaminergic medication dosage
    - Deep Brain Stimulation (DBS) of the STN is preferred to DBS of the GPi for reducing the need for dopaminergic medications
  - Patients with good response to levodopa experiencing dyskinesia as a side-effect
  - Patients experiencing mild to moderate quality of life disturbances*, including:
    - Mild depression
    - Sleep disturbance
    - Difficulties swallowing
    - Urinary incontinence
    - Speech difficulties
    - Cognitive impairment

*DBS has been found to improve these symptoms when they are relatively mild, but as cognitive and mood symptoms become more severe, DBS has been shown to exacerbate these problems. While there is no clear evidence that either the STN or GPi is a more successful target for QoL disturbances, GPi is associated with a lower risk of depression. [7–9]

- Dystonia* when [10–12]:
  - The patient diagnosis is generalized or cervical dystonia
  - Medical treatment, including Botulinum Neurotoxin, has failed to control symptoms

- Symptoms are severe, and interfere with activities of daily living

*If the patient has an intrathecal baclofen pump, they must be switched to oral baclofen to remove the pump.

Dorsal Column of the Spinal Cord

- A temporary stimulator trial has preceded permanent implantation and demonstrates significant pain reduction (50% or more).
  - Indications for a trial are the same as permanent implantation
  - The trial may be extended for up to 4 weeks.
- Duration of pain of at least 6 months [13]
- Pain causing functional disability or average pain level of ≥ 6 on a scale of 0 to 10, caused by at least one of the following [13,14]
  - Failed spine surgery syndrome (FSSS) or post-laminectomy syndrome [15]
  - Complex regional pain syndrome (CRPS), type I or type II, meeting Budapest criteria
  - Chronic neuropathic pain of certain origins that falls into **ONE** of the following diagnoses:
    - Lumbosacral arachnoiditis
    - Post herpetic neuralgia
    - Radiculopathy
    - Chronic ischemic leg pain
    - Diabetic peripheral neuropathy [16]
    - Phantom limb syndrome (stump pain)
    - Peripheral neuropathy
    - Chronic back pain (neuropathic pain) and not a surgical candidate
    - Chronic, refractory angina pectoris, characterized by **ALL** the following:
      - Continued angina after percutaneous coronary intervention or coronary artery bypass graft
      - Not a candidate for further revascularization
      - Angina is NYHA (New York Heart Association) III (less than ordinary physical activity causes symptoms) or IV (symptoms present at rest)
      - Optimal pharmacotherapy for at least one month with failure to tolerate medications in indicated dosage or failure to respond adequately to indicated medications
- Failure to respond to medical treatment, sympathetic nerve blocks, or epidural steroid injections, or a medically documented reason that non-surgical treatment cannot be performed [13,17]

Limitations

- Deep Brain Neurostimulators
  - Non-idiopathic Parkinson's disease or "Parkinson's Plus" syndromes
  - Cognitive impairment, dementia or depression, which would be worsened by or would interfere with the member's ability to benefit from DBS
  - Current psychosis, alcohol abuse or other drug abuse
  - Structural lesions such as basal ganglionic stroke, tumor or vascular malformation as etiology of the movement disorder
  - Previous movement disorder surgery within the affected basal ganglion
  - Significant medical, surgical, neurologic or orthopedic co-morbidities contraindicating DBS surgery or stimulation
  - Acute, untreated infection
  - DBS should be performed with extreme caution in members with cardiac pacemakers or other electronically controlled implants, which may adversely affect or be affected by the DBS system
- Dorsal Column Neurostimulators
  - Electronic analysis services are limited to one every 30 days

Background

Hoehn and Yahr stages of Disability**:**

- Stage I - Unilateral involvement only, usually with minimal or no functional impairment.
- Stage II - Bilateral or midline involvement, without impairment of balance.
- Stage III - First sign of impaired righting reflexes, evident by unsteadiness as patient turns or demonstrated when patient is pushed from standing equilibrium with the feet together and eyes closed. Functionally, the patient is somewhat restricted but is capable of activities of daily living (ADL). Disability is mild to moderate.
- Stage IV - Fully developed severe disabling disease. The patient is still able to walk and stand unassisted but is markedly incapacitated.
- Stage V - Confinement to wheelchair unless aided.

The Unified Parkinson Disease Rating Scale (UPDRS) is a rating tool used to follow the longitudinal course of PD. Its three sections include:

1] Mentation, Behavior, Mood;
2] ADL;
3] Motor Sections

The scale allows for a total of 199 points, with a score of 0 indicating no disability.

Codes

CPT Codes / HCPCS Codes / ICD-10 Codes	
Code	Description
61850	Twist drill or burr hole(s) for implantation of neurostimulator electrodes, cortical
61860	Craniectomy or craniotomy for implantation of neurostimulator electrodes, cerebral, cortical
61863	Twist drill, burr hole craniotomy, or craniectomy with stereotactic implantation of neurostimulator electrode array in subcortical site (thalamus, gobus pallidus, Subthalamic nucleus, periventricular, periaqueductal gray) without use of intraoperative microelectrode recording: 1st array
61864	Twist drill, burr hole craniotomy, or craniectomy with stereotactic implantation of neurostimulator electrode array in subcortical site (thalamus, gobus pallidus, Subthalamic nucleus, periventricular, periaqueductal gray) without use of intraoperative microelectrode recording: each additional array
61867	Twist drill, burr hole craniotomy, or craniectomy with stereotactic implantation of neurostimulator electrode array in subcortical site (thalamus, gobus pallidus, Subthalamic nucleus, periventricular, periaqueductal gray) with use of intraoperative microelectrode recording: 1st array
61868	Twist drill, burr hole craniotomy, or craniectomy with stereotactic implantation of neurostimulator electrode array in subcortical site (thalamus, gobus pallidus, Subthalamic nucleus, periventricular, periaqueductal gray) with use of intraoperative microelectrode recording: each additional array
61880	Revision or removal of intracranial neurostimulator electrodes
61885	Insertion or replacement of cranial neurostimulator pulse generator or receiver, direct or inductive coupling; with connection to a single electrode array
61886	Insertion or replacement of cranial neurostimulator pulse generator or receiver, direct or inductive coupling; with connection to two or more electrode arrays
61888	Revision or removal of cranial neurostimulator pulse generator or receiver
61889	Insertion of skull-mounted cranial neurostimulator pulse generator or receiver, including craniectomy or craniotomy, when performed, with direct

	or inductive coupling, with connection to depth and/or cortical strip electrode array(s)
61891	Revision or replacement of skull-mounted cranial neurostimulator pulse generator or receiver with connection to depth and/or cortical strip electrode array(s)
61892	Removal of skull-mounted cranial neurostimulator pulse generator or receiver with cranioplasty, when performed
Dorsal Column/Spinal Stimulators	
63650	Percutaneous implantation of neurostimulator electrode, epidural
63655	Laminectomy for implantable neurostimulator electrodes, plate/paddle, epidural
63685	Insertion or replacement of spinal neurostimulator pulse generator or receiver, requiring pocket creation and connection between electrode array and pulse generator or receiver
Other	
C1767	Generator, neurostimulator (implantable), non-rechargeable
C1778	Lead, neurostimulator (implantable)
C1816	Receiver and/or transmitter (implantable)
C1820	Generator, neurostimulator (implantable) with rechargeable battery and charging system
C1826	Generator, neurostimulator (implantable), includes closed feedback loop leads and all implantable components, with rechargeable battery and charging system
C1827	Generator, neurostimulator (implantable), nonrechargeable, with implantable stimulation lead and external paired stimulation controller
C1897	Lead, neurostimulator test kit (implantable)
L8678	Electrical stimulator supplies (external) for use with implantable neurostimulator, per month
L8679	Implantable neurostimulator, pulse generator, any type
L8680	Implantable neurostimulator electrode, each
L8681	Patient programmer (external) for use with implantable programmable neurostimulator pulse generator, replacement only
L8682	Implantable neurostimulator radiofrequency receiver

L8683	Radiofrequency transmitter (external) for use with implantable neurostimulator radiofrequency receiver
L8685	Implantable neurostimulator pulse generator, single array, rechargeable, includes extension
L8686	Implantable neurostimulator r pulse generator, single array, non-rechargeable, includes extension
L8687	Implantable neurostimulator pulse generator, dual array, rechargeable, includes extension
L8688	Implantable neurostimulator pulse generator, dual array, non-rechargeable, includes extension
L8695	External recharging system for battery (external) for use with implantable neurostimulator, replacement only
Electronic Analysis (Allow only 1 every 30 days)	
95970	Electronic analysis of implanted neurostimulator pulse generator system, simple or complex brain, spinal cord, or peripheral neurostimulator pulse generator/transmitter without programming
95971	Electronic analysis of implanted neurostimulator pulse generator system, simple or complex brain, spinal cord, or peripheral neurostimulator pulse generator/transmitter with intraoperative or subsequent programming
95972	Electronic analysis of implanted neurostimulator pulse generator system, simple or complex brain, spinal cord, or peripheral neurostimulator pulse generator/transmitter with intraoperative or subsequent programming, first hour
95976	Electronic analysis of implanted neurostimulator pulse generator/transmitter (eg, contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostim
95977	Electronic analysis of implanted neurostimulator pulse generator/transmitter (eg, contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostim
ICD-10 Codes for the following Deep Brain Stimulator CPT codes: 61863, 61864, 61867, 61868:	
G20	Parkinson's disease

G21.8	Other secondary parkinsonism
G24.1	Genetic torsion dystonia
G24.3	Spasmodic torticollis
G24.8	Other dystonia
G25.0	Essential tremor
G25.2	Other specified forms of tremor
ICD-10 Codes for the following Dorsal Column Neurostimulator CPT codes: 63650, 63655, and 63685:	
B02.22	Postherpetic trigeminal neuralgia
B02.23	Postherpetic polyneuropathy
B02.29	Other postherpetic nervous system involvement
G03	Meningitis due to other and unspecified causes
G03.0-G03.9	Meningitis due to other and unspecified causes
G54.6	Phantom limb syndrome with pain
G54.7	Phantom limb syndrome without pain
G54.8	Other nerve root and plexus disorders
G56	Mononeuropathies of upper limb
G56.00-G56.93	Mononeuropathies of upper limb
G57	Mononeuropathies of lower limb
G57.00-G57.93	Mononeuropathies of lower limb
G60	Hereditary and idiopathic neuropathy
G60.0-G60.9	Hereditary and idiopathic neuropathy
G90.5	Complex regional pain syndrome I (CRPS I)
G90.50-G90.529	Complex regional pain syndrome I (CRPS I)
I73	Other peripheral vascular diseases
I73.00-I73.9	Other peripheral vascular diseases

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
M51.24	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
M51.44	Schmorl's nodes, thoracic region
M51.45	Schmorl's nodes, thoracolumbar region
M51.46	Schmorl's nodes, lumbar region
M51.47	Schmorl's nodes, lumbosacral region
M51.9	Unspecified thoracic, thoracolumbar and lumbosacral intervertebral disc disorder
M54.12	Radiculopathy, cervical region
M54.13	Radiculopathy, cervicothoracic region
M96.1	Postlaminectomy syndrome, not elsewhere classified
S22.0	Fracture of thoracic vertebra
S22.000A-S22.089S	Fracture of thoracic vertebra
S24.1	Other and unspecified injuries of thoracic spinal cord
S24.101A-S24.109S	Other and unspecified injuries of thoracic spinal cord
S32.0	Fracture of lumbar vertebra
S32.000A-S32.059S	Fracture of lumbar vertebra
S33.1	Subluxation and dislocation of lumbar vertebra
S33.100A-S33.141S	Subluxation and dislocation of lumbar vertebra
S34.1	Other and unspecified injury of lumbar and sacral spinal cord
S34.101A-S34.139S	Other and unspecified injury of lumbar and sacral spinal cord

S34.3	Injury of cauda equina

References

1. Hopfner F, Deuschl G. Managing Essential Tremor. Neurotherapeutics. 2020;17(4):1603-1621. doi:10.1007/s13311-020-00899-2 https://pubmed.ncbi.nlm.nih.gov/32915385/
2. Kricheldorff J, Göke K, Kiebs M, et al. Evidence of Neuroplastic Changes after Transcranial Magnetic, Electric, and Deep Brain Stimulation. Brain Sci. 2022;12(7):929. doi:10.3390/brainsci12070929 https://pubmed.ncbi.nlm.nih.gov/35884734/
3. Sandoval-Pistorius SS, Hacker ML, Waters AC, et al. Advances in Deep Brain Stimulation: From Mechanisms to Applications. The Journal of Neuroscience. 2023;43(45):7575-7586. doi:10.1523/JNEUROSCI.1427-23.2023 https://pubmed.ncbi.nlm.nih.gov/37940596/
4. Hartshorn A, Jobst B. Responsive brain stimulation in epilepsy. Ther Adv Chronic Dis. 2018;9(7):135-142. doi:10.1177/2040622318774173 https://pubmed.ncbi.nlm.nih.gov/29963302/
5. Yang JC, Bullinger KL, Dickey AS, et al. Anterior nucleus of the thalamus deep brain stimulation vs temporal lobe responsive neurostimulation for temporal lobe epilepsy. Epilepsia. 2022;63(9):2290-2300. doi:10.1111/epi.17331 https://pubmed.ncbi.nlm.nih.gov/35704344/
6. Shah H, Usman O, Ur Rehman H, et al. Deep Brain Stimulation in the Treatment of Parkinson's Disease. Cureus. Published online September 3, 2022. doi:10.7759/cureus.28760 https://pubmed.ncbi.nlm.nih.gov/36211107/
7. Tan Z, Zhou Q, Huang T, Jiang Y. Efficacies of globus pallidus stimulation and subthalamic nucleus stimulation for advanced Parkinson's disease: a meta-analysis of randomized controlled trials. Clin Interv Aging. Published online June 2016:777. doi:10.2147/CIA.S105505 https://pubmed.ncbi.nlm.nih.gov/27382262/
8. Rughani A, Schwalb JM, Sidiropoulos C, et al. Congress of Neurological Surgeons Systematic Review and Evidence-Based Guideline on Subthalamic Nucleus and Globus Pallidus Internus Deep Brain Stimulation for the Treatment of Patients With Parkinson's Disease: Executive Summary. Neurosurgery. 2018;82(6):753-756. doi:10.1093/neuros/nyy037 https://pubmed.ncbi.nlm.nih.gov/29538685/

9. Artusi CA, Lopiano L, Morgante F. Deep Brain Stimulation Selection Criteria for Parkinson's Disease: Time to Go beyond CAPSIT-PD. J Clin Med. 2020;9(12):3931. doi:10.3390/jcm9123931 https://pubmed.ncbi.nlm.nih.gov/33291579/
10. Moro E, LeReun C, Krauss JK, et al. Efficacy of pallidal stimulation in isolated dystonia: a systematic review and meta-analysis. Eur J Neurol. 2017;24(4):552-560. doi:10.1111/ene.13255 https://pubmed.ncbi.nlm.nih.gov/28186378/
11. Kamel WA, Majumdar P, Matis G, et al. Surgical Management for Dystonia: Efficacy of Deep Brain Stimulation in the Long Term. Neurol Int. 2021;13(3):371-386. doi:10.3390/neurolint13030037 https://pubmed.ncbi.nlm.nih.gov/34449699/
12. Jacksch C, Zeuner KE, Helmers AK, Witt K, Deuschl G, Paschen S. Long-term efficacy with deep brain stimulation of the globus pallidus internus in cervical dystonia: a retrospective monocentric study. Neurol Res Pract. 2022;4(1):48. doi:10.1186/s42466-022-00214-8 https://pubmed.ncbi.nlm.nih.gov/36184607/
13. Thomson S, Huygen F, Prangnell S, et al. Appropriate referral and selection of patients with chronic pain for spinal cord stimulation: European consensus recommendations and e-health tool. Eur J Pain. 2020;24(6):1169-1181. doi:10.1002/ejp.1562 https://pubmed.ncbi.nlm.nih.gov/32187774/
14. Shanthanna H, Eldabe S, Provenzano DA, et al. Evidence-based consensus guidelines on patient selection and trial stimulation for spinal cord stimulation therapy for chronic non-cancer pain. Reg Anesth Pain Med. 2023;48(6):273-287. doi:10.1136/rapm-2022-104097 https://pubmed.ncbi.nlm.nih.gov/37001888/
15. Palmer N, Guan Z, Chai NC. Spinal Cord Stimulation for Failed Back Surgery Syndrome -- Patient Selection Considerations. Transl Perioper Pain Med. 2019;6(3):81-90. https://pubmed.ncbi.nlm.nih.gov/31687422/
16. Petersen EA, Stauss TG, Scowcroft JA, et al. Long-term efficacy of high-frequency (10 kHz) spinal cord stimulation for the treatment of painful diabetic neuropathy: 24-Month results of a randomized controlled trial. Diabetes Res Clin Pract. 2023;203:110865. doi:10.1016/j.diabres.2023.110865 https://pubmed.ncbi.nlm.nih.gov/37536514/
17. Deer TR, Russo M, Grider JS, et al. The Neurostimulation Appropriateness Consensus Committee (NACC): Recommendations on Best Practices for Cervical

Neurostimulation. Neuromodulation. 2022;25(1):35-52. doi:10.1016/j.neurom.2021.10.013 https://pubmed.ncbi.nlm.nih.gov/35041587/

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