**Description:**

Deep brain stimulation (DBS) involves the unilateral or bilateral stereotactic placement of an electrode into the brain to improve the symptoms of selected brain disorders. A “test” electrode is placed to determine if electrical stimulation will suppress the symptoms. If suppressed, a permanent electrode is placed. DBS has been investigated as a treatment of cluster headaches, multiple sclerosis, dyskinesias, and certain psychiatric and neurological disorders.

**Essential Tremor:**
A brain disorder involving rhythmic tremors of the voluntary muscles when an individual is moving or trying to move. There is no identifiable cause.

**Microelectrode Mapping:**
Intraoperative microelectrode mapping (neurophysiologic mapping or testing) required for precise placement of electrodes during deep brain stimulation.

**Parkinson's Disease (PD):**
A brain disorder involving tremors and movement difficulty, i.e., rigidity, akinesia, bradykinesia, dyskinesia, and lack of coordination. PD may affect one or both sides of the body.
DEEP BRAIN STIMULATION (cont.)

Definitions:

Primary Dystonia:
A brain disorder involving involuntary muscle contractions that force certain parts of the body into contorted, sometimes painful movements or postures.

Disabling:
Causes significant limitation in activities of daily living.

Medication-refractory:
Inadequate control by maximum dosage of medication for at least 3 months before implantation; drug resistant.

Criteria:

Parkinson’s Disease:

- Unilateral or bilateral deep brain stimulation of the thalamus for treatment of Parkinson’s disease is considered medically necessary with documentation of ALL of the following:
  1. Symptoms are disabling and medication-refractory (see Definitions section)
  2. No unstable medical problems or cardiac pacemaker
  3. No medical condition that requires repeated MRIs
  4. No dementia that may interfere with the ability to cooperate
  5. No botulinum toxin injections within the last 6 months

- Unilateral or bilateral deep brain stimulation of the globus pallidus or subthalamic nucleus area of the brain for treatment of Parkinson’s disease is considered medically necessary with documentation of ALL of the following:
  1. Good response to levodopa
  2. Minimal score of 30 points on the Unified Parkinson Disease Rating Scale when individual has been without medication for about 12 hours
  3. Motor complications not controlled by pharmacologic therapy
  4. No unstable medical problems or cardiac pacemaker
  5. No medical condition that requires repeated MRIs
  6. No dementia that may interfere with the ability to cooperate
  7. No botulinum toxin injections within the last 6 months
DEEP BRAIN STIMULATION (cont.)

Criteria: (cont.)

**Essential Tremor:**

- Unilateral or bilateral deep brain stimulation for treatment of essential tremor is considered *medically necessary* with documentation of **ALL** of the following:

  1. Symptoms have been present for 3 months or greater
  2. Symptoms are disabling and medication-refractory (see Definitions section)
  3. No dementia that may interfere with the ability to cooperate
  4. Brain MRI is normal or shows no evidence of structural abnormalities
  5. No prior intracranial surgery at targeted area
  6. Stimulation is to the thalamus, globus pallidus or subthalamic nucleus area of the brain

**Primary Dystonia:**

- Unilateral or bilateral deep brain stimulation for treatment of primary dystonia is considered *medically necessary* with documentation of the following:

  1. Individual is 7 years of age or older
  2. Symptoms are chronic and medication-refractory (see Definitions section)
  3. Stimulation is to the globus pallidus or subthalamic nucleus area of the brain

**Microelectrode Mapping:**

- Intraoperative microelectrode mapping is required and considered *medically necessary* for precise placement of electrodes during deep brain stimulation.
DEEP BRAIN STIMULATION (cont.)

Criteria: (cont.)

Other:

- Unilateral or bilateral deep brain stimulation for all other indications not previously listed or if above criteria not met is considered experimental or investigational based upon:
  1. Insufficient scientific evidence to permit conclusions concerning the effect on health outcomes, and
  2. Insufficient evidence to support improvement of the net health outcome.

These indications include, but are not limited to:

- Cluster headaches
- Multiple sclerosis
- Post-traumatic dyskinesia
- Tardive dyskinesia
- Treatment of other psychiatric or neurologic disorders, e.g., Tourette syndrome, depression, obsessive compulsive disorder, epilepsy, anorexia nervosa, alcohol addiction, chronic pain.

1 Includes generalized and/or segmental dystonia, hemidystonia and cervical dystonia (torticollis).

Resources:

DEEP BRAIN STIMULATION  (cont.)

Resources:  (cont.)

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DEEP BRAIN STIMULATION (cont.)

Resources: (cont.)

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