MOUNTAIN VIEW MEDICAL CENTER

Department of Neurosciences - Movement Disorder Institute
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REQUEST FOR PRIOR AUTHORIZATION

DEEP BRAIN STIMULATION SURGERY

ADMINISTRATIVE INFORMATION

Submission Date: September 18, 2025

Requested Procedure: Bilateral Subthalamic Nucleus Deep Brain Stimulation

Procedure Codes: CPT 61863, 61868

Diagnosis Codes: G20 (Parkinson's Disease)

PATIENT INFORMATION

Patient Name: ANDERSON, Harold Eugene

Date of Birth: February 12, 1949

Age: 76 years

Gender: Male

Medical Record Number: MVMC-449823

Insurance: Medicare Traditional (Part A & B)

Medicare Number: 1EG4-TE5-MK72

DIAGNOSIS

Primary Diagnosis: G20 - Idiopathic Parkinson's Disease

Duration: 14 years (onset 2011)

Secondary Diagnoses: G25.83 - Motor fluctuations in diseases classified elsewhere

F32.0 - Major depressive disorder, single episode, mild

I10 - Essential hypertension (controlled)

CLINICAL HISTORY AND PRESENTATION

Mr. Anderson is a 76-year-old retired accountant with a 14-year history of idiopathic Parkinson's disease. Disease onset in 2011 with right-sided rest tremor and subjective slowing. Formal diagnosis established by movement disorder specialist Dr. Eleanor Wright in 2011. Initial treatment with carbidopa-levodopa resulted in excellent symptomatic control for approximately 7-8 years.

Beginning approximately 6 years ago, patient began experiencing motor fluctuations characterized by predictable wearing-off phenomena. Over the past 3-4 years, OFF periods have become increasingly prolonged and unpredictable, occurring 5-6 hours daily (in 3-4 episodes) despite aggressive medication optimization. During OFF periods, patient experiences severe bradykinesia, rigidity, freezing of gait with multiple falls (6 falls in past year), and functional dependency requiring assistance from wife for basic activities of daily living.

Cardinal Features of Parkinson's Disease - All Present:

- **Resting Tremor:** Bilateral, right greater than left, predominantly affecting upper extremities. Amplitude 2-3/4 in OFF state, resolves in ON state.
- **Rigidity:** Cogwheel type, bilateral upper and lower extremities. Scored 2-3/4 in OFF state, 1/4 in ON state.
- **Bradykinesia:** Marked generalized slowing. Finger tapping shows severe decrement and progressive reduction in amplitude bilaterally, more pronounced on right.

MOTOR ASSESSMENT SCALES

Unified Parkinson's Disease Rating Scale (UPDRS) Part III - Motor Examination:

State	Total Score	Date Assessed
OFF medications (>12 hours)	55 / 132	September 10, 2025
ON medications (optimal dose)	24 / 132	September 10, 2025
Improvement	**31 points (56%)**	**Excellent response**

Hoehn and Yahr Stage:

- OFF medications: Stage 3 (bilateral disease with postural instability, physically independent)
- ON medications: Stage 2 (bilateral disease without impairment of balance)

Levodopa Challenge Test Documentation (August 22, 2025):

> Patient held all antiparkinsonian medications for 12 hours overnight. Baseline UPDRS Part III performed: 57. Patient then administered carbidopa-levodopa 25/250 (three tablets = 75/750mg total). Serial examinations performed at 30-minute intervals. Peak effect observed at 60-90 minutes post-dose with UPDRS Part III score of 25 (56% improvement from baseline). Clear "ON" period lasted approximately 2.5 hours before wearing off. Patient reported this response typical of daily experience with medications.

COMPREHENSIVE MEDICATION HISTORY

Medication	Current Dose	Frequency	Duration of Use	Response/Notes
Carbidopa-Levodopa	25/100mg, 2 tablets	Five times daily	14 years	Primary medication; dose gradually escalated over years
Carbidopa-Levodopa CR	50/200mg	Bedtime	5 years	For nocturnal symptoms
Entacapone	200mg	With each levodopa dose	6 years	COMT inhibitor; extends levodopa duration
Pramipexole ER	4.5mg	Once daily	8 years	Dopamine agonist; at maximum tolerated dose
Rasagiline	1mg	Once daily	7 years	MAO-B inhibitor
Amantadine immediate release	100mg	Three times daily	4 years	Modest benefit for dyskinesias

Medication Optimization Notes: Patient has been managed by movement disorder specialist continuously for 14 years with multiple medication adjustments. All first-line and second-line agents have been trialed at maximal tolerated doses. Multiple timing adjustments attempted to minimize OFF periods. Apomorphine considered but patient declined injectable therapy. Despite optimal medical management with six concurrent medications, disabling OFF periods persist 5-6 hours daily.

DIAGNOSTIC STUDIES

Brain MRI with and without Gadolinium Contrast (July 15, 2025):

Technique: 3T MRI, multiplanar multisequence imaging including T1, T2, FLAIR, DWI, SWI, post-contrast T1.

Findings: Mild-moderate cerebral volume loss with prominence of sulci and ventricles, within expected range for patient's age. Small vessel ischemic changes in periventricular and subcortical white matter, mild in severity (Fazekas grade 1-2). No acute infarction. Basal ganglia demonstrate normal signal intensity bilaterally with no evidence of stroke, hemorrhage, or structural lesion. No masses, abnormal enhancement, or vascular malformations. Posterior fossa structures unremarkable. No findings to suggest atypical parkinsonian syndrome (no significant midbrain atrophy, no hot cross bun sign, no putaminal changes).

Impression: Age-appropriate involutional changes with mild small vessel disease. No basal ganglia pathology. No contraindications to stereotactic neurosurgery. Images suitable for surgical planning and targeting.

DaTscan SPECT Imaging (March 2023):

Markedly reduced striatal dopamine transporter uptake bilaterally, asymmetric with right striatum more affected than left (correlating with left-sided symptom predominance). Pattern consistent with idiopathic Parkinson's disease.

NEUROPSYCHOLOGICAL EVALUATION

Comprehensive Neuropsychological Assessment performed by Lisa Martinez, PhD
Date: August 5, 2025
Duration: 3.5 hours over two sessions

Montreal Cognitive Assessment (MOCA): 24/30

Points lost: Delayed recall (3 points), Trail making (1 point), Abstraction (1 point), Visuospatial/Executive (1 point)

Extended Neuropsychological Battery Results:

Domain	Tests Administered	Performance
General Cognition	WAIS-IV (selected subtests)	FSIQ estimate: 98 (average range)
Memory	CVLT-3, WMS-IV Logical Memory	Immediate recall: Low average; Delayed recall: Low average; Recognition: Average
Executive Function	Stroop, Trail Making Test, WCST	Processing speed mildly reduced; Mental flexibility preserved; Problem-solving intact
Attention	CPT-3, Digit Span	Sustained attention adequate; Working memory average
Language	BNT, Category Fluency	Naming intact; Fluency mildly reduced (may reflect motor slowing)
Visuospatial	RCFT, Hooper VOT	Construction mildly impaired (may reflect motor factors); Recognition intact

Clinical Interview and Behavioral Observations:

Patient cooperative throughout testing, demonstrating good effort and persistence despite motor difficulties. No evidence of confabulation or lack of insight. Appropriately concerned about memory complaints but not catastrophizing. Functional deficits primarily attributable to motor symptoms rather than cognitive impairment.

Diagnostic Impression and Clinical Interpretation:

Mr. Anderson's cognitive profile reveals **age-related cognitive slowing** with mildly reduced processing speed and mild difficulties with complex memory tasks. However, comprehensive testing

demonstrates that **cognitive function does not meet diagnostic criteria for dementia** by DSM-5 standards. Core cognitive abilities including reasoning, problem-solving, and functional decision-making remain preserved. Memory difficulties are characterized by encoding/retrieval inefficiency rather than consolidation deficits, as evidenced by improved performance with recognition paradigms.

The MOCA score of 24/30, while below traditional cutoff of 26, must be interpreted in clinical context. Given patient's age (76), education level (college graduate), and the comprehensive battery results showing average-to-low-average performance across domains, this represents **mild cognitive changes associated with normal aging, not dementia**. Performance deficits are partially attributable to motor slowing affecting timed tests and bradykinesia affecting construction tasks.

Critically, there is no evidence that cognitive status would interfere with patient's ability to:

- Understand and consent to DBS procedure
- Cooperate during awake surgery
- Participate in post-operative programming sessions
- Reliably report symptom changes
- Benefit from DBS therapy

Conclusion: Patient is APPROVED for DBS candidacy from neuropsychological perspective. Cognitive function does not meet exclusion criteria.

PSYCHIATRIC EVALUATION

Neuropsychiatry Assessment by Thomas Chen, MD
Date: August 12, 2025

Patient reports mildly depressed mood, which he attributes to limitations imposed by Parkinson's disease and loss of independence. Beck Depression Inventory-II score: 16 (mild depression range). No vegetative symptoms suggestive of major depression. No anhedonia. Maintains interest in family activities and hobbies (reading, watching sports) to extent motor symptoms allow.

Mental status examination: Alert, oriented, appropriate affect. No evidence of psychosis, hallucinations, or delusions. Thought process linear and goal-directed. Judgment and insight intact. No suicidal or homicidal ideation.

Assessment: Mild reactive depressive symptoms secondary to chronic illness and disability. Does not meet criteria for major depressive disorder. Depression would not be expected to worsen with DBS or interfere with patient's ability to benefit from procedure. **CLEARED for DBS from psychiatric standpoint.**

ASSESSMENT OF EXCLUSION CRITERIA

1. Non-idiopathic Parkinson's or "Parkinson's Plus" Syndromes: ABSENT

Diagnosis of idiopathic Parkinson's disease supported by: (1) Presence of all three cardinal features, (2) Asymmetric onset and progression, (3) Excellent and sustained levodopa responsiveness (56% UPDRS improvement), (4) DaTscan confirming presynaptic dopaminergic deficit, (5) 14-year disease course typical of idiopathic PD, (6) No clinical features of MSA, PSP, CBD, or vascular parkinsonism, (7) MRI excluding structural lesions.

2. Cognitive Impairment, Dementia, or Depression that would interfere with DBS benefit: ABSENT

Extensive neuropsychological testing (3.5 hours) demonstrates age-appropriate cognitive function without dementia. MOCA score of 24 reflects age-related slowing, not dementia. Formal neuropsych evaluation confirms patient has capacity to consent, cooperate with surgery, and participate in programming. Mild reactive depression present but does not meet exclusion threshold. Both neuropsychologist and psychiatrist cleared patient for DBS.

3. Current Psychosis, Alcohol Abuse, or Other Drug Abuse: ABSENT

No history or current evidence of psychosis. No hallucinations or delusions. Patient is social drinker only (1-2 glasses wine per week with dinner). No history of alcohol abuse or dependence. No illicit drug use. No prescription medication misuse.

4. Structural Lesions (stroke, tumor, vascular malformation): ABSENT

Recent brain MRI (July 2025) demonstrates no basal ganglia stroke, tumor, or vascular malformation. Mild small vessel ischemic changes present in white matter (age-appropriate, not involving basal ganglia). No pathology that would explain movement disorder symptoms.

5. Previous Movement Disorder Surgery: ABSENT

No prior deep brain stimulation, lesioning procedures (pallidotomy, thalamotomy), or other brain surgery.

6. Significant Medical/Surgical/Neurologic/Orthopedic Comorbidities Contraindicating DBS: ABSENT

Age 76 but physiologically healthy. Hypertension well-controlled on amlodipine 5mg daily (BP consistently 130-140/75-85). Cardiovascular evaluation by Dr. James Morrison (8/20/2025): Normal ECG, echocardiogram showing preserved ejection fraction (60%), cleared for surgery with perioperative beta blockade. Anesthesia consultation (8/28/2025): ASA class II, cleared for awake craniotomy with conscious sedation. No anticoagulation. No pacemaker or other implanted devices. Functionally active with good exercise tolerance when in ON state. Age is not absolute contraindication given good functional status and high motivation.

PATIENT COOPERATION AND INFORMED CONSENT

Mr. and Mrs. Anderson attended comprehensive DBS educational seminar (2 hours) on August 30, 2025, followed by individual consultation with neurosurgeon and neurologist (September 3, 2025). Patient demonstrated excellent comprehension of:

- Nature of awake surgical procedure with local anesthesia and conscious sedation
- Requirement for patient cooperation during microelectrode recording and stimulation testing
- Post-operative programming process (estimated 5-7 visits over 3-6 months)
- Realistic expectations (significant motor improvement expected but not cure; continued need for medications at reduced doses)
- Surgical risks including hemorrhage (1-2%), infection (3-5%), hardware complications, cognitive changes, speech/gait difficulties

Patient verbalized understanding in own words and asked appropriate questions regarding recovery timeline and expected outcomes. Despite age, patient cognitively intact with capacity to provide informed consent. Neuropsychological evaluation confirmed decisional capacity.

Wife will serve as primary caregiver during recovery and will transport patient to all programming appointments. Strong family support system in place including two adult children living locally who have offered assistance.

DEVICE AND PROCEDURAL INFORMATION

Proposed Device: Abbott Infinity™ Deep Brain Stimulation System

FDA Approval Status: FDA approved (PMA P040046) for bilateral STN or GPi stimulation for Parkinson's disease

Anatomical Target: Bilateral Subthalamic Nucleus (STN)

Surgical Approach: Awake bilateral frame-based stereotactic implantation with microelectrode recording and intraoperative testing

PROVIDER AND FACILITY QUALIFICATIONS

Neurosurgeon: Gregory Reynolds, MD, PhD

- Board Certified: American Board of Neurological Surgery (2008)
- Fellowship: Functional and Stereotactic Neurosurgery, Mayo Clinic (2009-2010)
- Experience: 17 years performing stereotactic procedures, 220+ DBS implantations
- Faculty: Associate Professor of Neurosurgery, University of Colorado School of Medicine
- Publications: 40+ peer-reviewed articles on DBS and movement disorders surgery
- Society Memberships: American Society for Stereotactic and Functional Neurosurgery (ASSFN), Congress of Neurological Surgeons

Movement Disorder Neurologist: Eleanor Wright, MD

- Board Certified: American Board of Psychiatry and Neurology (2008)
- Subspecialty Certification: Movement Disorders (2010)
- Experience: 15 years specializing in Parkinson's disease, 180+ DBS patients managed pre- and post-operatively
- Fellowship: Movement Disorders, Columbia University Medical Center (2009-2010)

- Responsibilities: Patient selection, medication optimization pre-operatively, all post-operative DBS programming

Operative Team:

- Neurophysiologist: Dr. Sarah Kim, PhD - Intraoperative microelectrode recording and mapping
- Neuroanesthesia: Dr. Michael Torres, MD - Experience with 200+ awake craniotomies
- Movement Disorder Fellow: Dr. James Park, MD - Will assist with intraoperative clinical testing

Facility: Mountain View Medical Center

- Academic tertiary care medical center, Level I Trauma Center
- Dedicated stereotactic neurosurgery suite with:
  - Leksell® Stereotactic System
  - Intraoperative 3T MRI (Siemens Skyra)
  - Advanced microelectrode recording equipment (Alpha Omega system)
  - Frameless stereotactic navigation (Brainlab)
- Neurocritical care unit with 24/7 neurosurgical coverage
- Dedicated DBS programming clinic (3 days per week)
- Institutional DBS experience: >70 cases performed annually since program inception in 2005 (1000+ total cases)
- Multidisciplinary DBS team meetings held biweekly for case selection

MULTIDISCIPLINARY EVALUATION

Patient case reviewed at Movement Disorder Surgery Conference on September 10, 2025. Attendees: Dr. Reynolds (neurosurgery), Dr. Wright (neurology), Dr. Martinez (neuropsychology), Dr. Chen (psychiatry), Sarah Johnson RN MSN (DBS coordinator), Dr. Morrison (cardiology).

Team Consensus: Patient meets criteria for bilateral STN DBS. Although age 76 with borderline MOCA, comprehensive evaluation demonstrates preserved functional cognition without dementia. Excellent levodopa responsiveness predicts good DBS outcome. Medical comorbidities controlled with appropriate clearances obtained. Strong family support. Benefits of DBS outweigh risks. Unanimous approval for surgical candidacy.

CLINICAL SUMMARY

Mr. Harold Anderson is a 76-year-old male with 14-year history of idiopathic Parkinson's disease characterized by presence of all three cardinal features (tremor, rigidity, bradykinesia), asymmetric onset, and excellent sustained responsiveness to levodopa (56% UPDRS improvement, clearly defined ON periods lasting 2.5 hours). He has advanced disease with UPDRS Part III motor scores of 55 in OFF state improving to 24 in ON state, and Hoehn & Yahr Stage 3 OFF medications.

Despite optimal medical management with six concurrent medications at maximal tolerated doses (carbidopa-levodopa, entacapone, dopamine agonist, MAO-B inhibitor, amantadine, CR formulation), patient experiences persistent disabling OFF periods totaling 5-6 hours daily with functional dependency,

freezing of gait, and fall risk. Medication adjustment attempts over 14 years have been exhaustive. Motor fluctuations now significantly limit quality of life and activities of daily living.

Comprehensive evaluation excludes all contraindications to DBS. DaTscan and clinical features confirm idiopathic PD without atypical features. Although MOCA score is 24/30, extensive neuropsychological testing (3.5 hours) demonstrates this represents age-related cognitive slowing rather than dementia, with preserved functional cognition and capacity to benefit from DBS. Both neuropsychologist and psychiatrist provided clearance. Mild reactive depression does not meet exclusion threshold. No psychosis or substance abuse. MRI shows no basal ganglia structural lesions (mild small vessel disease in white matter is age-appropriate and does not involve target structures). No prior movement disorder surgery. Medical comorbidities are controlled with cardiology and anesthesia clearance obtained.

Patient demonstrates excellent understanding of DBS procedure, realistic expectations, and strong motivation. He is willing and able to cooperate during awake surgery and commit to post-operative programming requirements. Wife provides strong support and will assist with transportation and care.

Surgery will be performed by highly experienced team at academic medical center with established DBS program (>1000 cases) using FDA-approved Abbott Infinity system for bilateral STN stimulation.

PHYSICIAN RECOMMENDATION

Based on comprehensive evaluation, this patient meets criteria for bilateral subthalamic nucleus deep brain stimulation for advanced Parkinson's disease with motor complications despite optimal medical therapy. The multidisciplinary team supports surgical candidacy. Surgery planned for bilateral STN DBS using FDA-approved device at qualified facility.

Respectfully submitted,

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Eleanor Wright, MD
Movement Disorders Neurology
Mountain View Medical Center
Date: September 18, 2025

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Gregory Reynolds, MD, PhD
Functional and Stereotactic Neurosurgery
Mountain View Medical Center
Date: September 18, 2025