

Neurosurgery

1. MCG Criteria Used

Clinical Criteria: MCG Care Guidelines, 30th Edition

- Craniotomy for Traumatic Brain Injury or Intracerebral Hemorrhage (MCG ORG: S-414 ISC, 30th Edition)
- Acoustic Neuroma, Microsurgical Resection (MCG ORG: A-0176 AC, 30th Edition)

Applicable CPT / HCPCS Codes:

CPT / HCPCS Code	Description
61312, 61313	Craniectomy or craniotomy for evacuation of hematoma, supratentorial; extradural or subdural, or intracerebral
61314, 61315	Craniectomy or craniotomy for evacuation of hematoma, infratentorial; extradural or subdural, or intracerebellar
61322, 61323	Craniectomy or craniotomy, decompressive, with or without duraplasty, for treatment of intracranial hypertension
61570, 61571	Craniectomy or craniotomy for excision or treatment of penetrating brain wound or foreign body
62005, 62010	Treatment of depressed skull fracture and related surgical management of traumatic brain injury
00211	Anesthesia for intracranial procedures; craniotomy or craniectomy for hematoma
009000Z, 00900ZZ, 00910ZZ (and related)	Drainage and surgical management of intracranial structures (ICD-10-PCS procedure)
61520, 61526, 61530	Craniectomy for excision of cerebellopontine angle tumor (acoustic neuroma), by various surgical approaches

2. Statement of Rationale

Akido Labs uses the criteria in MCG Care Guidelines (30th Edition) to supplement the general Medicare criteria regarding neurosurgery services, including craniotomy for traumatic brain injury or intracerebral hemorrhage and microsurgical resection of acoustic neuroma, where Medicare coverage criteria are not fully established or require additional clinical specificity. MCG criteria are used to ensure consistency in reviewing the conditions to be met for coverage of neurosurgery services and to determine when such services are medically necessary.

Neurosurgical disease in the Medicare Advantage population ranges from emergent, life-threatening intracranial hemorrhage requiring immediate surgical decompression to elective resection of a benign but progressively symptomatic skull base tumor. Each carries distinct clinical stakes, and the population's higher comorbidity burden and anticoagulant use elevate both hemorrhage risk and perioperative complexity. Absent consistent, evidence-based criteria, there is material risk of both inappropriate denial of medically necessary, often emergent, neurosurgical care and inappropriate approval of elective procedures performed without adequate indication.

Potential Clinical Harms:

Craniotomy for traumatic brain injury or intracerebral hemorrhage: Inappropriate denial or delay of craniotomy for an epidural or subdural hematoma, traumatic subarachnoid or intracerebral hemorrhage, penetrating injury, compound depressed skull fracture, or intractable raised intracranial pressure could allow brain herniation, irreversible neurologic injury, and death. This is a time-critical, often emergent intervention in which delay measured in hours materially worsens survival and functional outcome.

Acoustic neuroma microsurgical resection: Inappropriate denial of microsurgical resection for a symptomatic, MRI-confirmed acoustic neuroma causing brainstem compression, hydrocephalus, progressive cranial neuropathy, facial weakness, or disabling hearing loss could allow tumor growth with progressive and potentially irreversible neurologic deficit, including life-threatening brainstem compression and hydrocephalus.

Clinical Benefits:

Craniotomy for traumatic brain injury or intracerebral hemorrhage: MCG criteria provide validated indications drawn from specialty society guidelines and randomized trial evidence, supporting craniotomy and surgical evacuation for epidural and subdural hematoma and the other listed intracranial emergencies. By tying the procedure to these specific, evidence-based indications, the criteria directly counter the harm of herniation, irreversible injury, and death from undertreated intracranial hemorrhage identified above, while supporting appropriate inpatient and intensive care with a goal length of stay of 5 days postoperative; analysis of national hospital discharge data shows 33% of patients were discharged in 5 days or less.

Acoustic neuroma microsurgical resection: MCG criteria require MRI confirmation of the tumor and the presence of specific symptoms (e.g., brainstem compression, hydrocephalus, cranial neuropathy, facial weakness, disabling sensorineural hearing loss) before microsurgical resection is appropriate. Evidence demonstrates at least moderate certainty of at least moderate net benefit for operative management, directly addressing the harm of progressive neurologic deficit and brainstem compression identified above by reserving surgery for symptomatic, confirmed disease.

Reduction of unwarranted variation and overutilization: MCG criteria also identify circumstances where a less invasive alternative is appropriate (e.g., nonoperative management or close observation for selected small or minimally symptomatic intracranial lesions, stereotactic radiosurgery or surveillance for selected small acoustic neuromas), reducing unnecessary operative exposure in this population. The clinical benefits of using MCG Care Guidelines are highly likely to outweigh any clinical harms, including delayed or decreased access to services. The criteria are unlikely to lead to inappropriate denials because they incorporate indications drawn directly from current neurosurgical specialty society guidelines and high-quality evidence. Use of these criteria ensures patients receive the most clinically appropriate level of care, and decreases inappropriate denials by applying a consistent, objective, evidence-based set of review criteria across the Medicare Advantage population.

3. Explanation of Supplementation

Basis for Use:

Original Medicare clinical criteria are not fully established and require supplementation to ensure consistent medical necessity determinations for specific neurosurgery services, including craniotomy for traumatic brain injury or intracerebral hemorrhage and microsurgical resection of acoustic neuroma. While Medicare statutes establish the general 'reasonable and necessary' standard, they do not specify the clinical indications and thresholds (e.g., the specific hematoma, hemorrhage, and raised intracranial pressure indications for craniotomy, or the MRI confirmation

and symptom criteria for acoustic neuroma resection) required to distinguish indicated from nonindicated procedures and inpatient-appropriate from ambulatory-appropriate care.

Applicable Medicare References:

- Social Security Act Section 1862(a)(1): 'Reasonable and necessary' standard
- Medicare Benefit Policy Manual, Chapter 1: Inpatient Hospital Services Covered Under Part A (CMS IOM Publication 100-02)
- Medicare Benefit Policy Manual, Chapter 6: Hospital Services Covered Under Part B (CMS IOM Publication 100-02)
- Medicare Benefit Policy Manual, Chapter 14: Medical Devices (CMS IOM Publication 100-02)
- Medicare Benefit Policy Manual, Chapter 15: Covered Medical and Other Health Services (CMS IOM Publication 100-02)
- Medicare Benefit Policy Manual, Chapter 16: General Exclusions from Coverage (CMS IOM Publication 100-02)
- Medicare Program Integrity Manual, Chapter 6, Section 6.5: Medical Review of Inpatient Hospital Claims for Part A Payment (CMS IOM Publication 100-08)
- Code of Federal Regulations: 42 CFR 412.3; 42 CFR 419.22; 42 CFR 422.101
- National Coverage Determinations: For craniotomy and acoustic neuroma resection, no specific NCD or LCD fully establishes clinical procedural thresholds; Original Medicare criteria are not fully established for these services, requiring supplementation.
- Medicare Coverage Database:
<https://www.cms.gov/medicare-coverage-database/search.aspx>

Within the above statutes and regulations, coverage criteria for these specific neurosurgery services are not fully established, and the use of MCG Care Guidelines is necessary to provide additional clinical specificity. Specifically, MCG criteria assist in determining:

- Medical necessity and appropriateness of craniotomy for the specific traumatic and hemorrhagic intracranial indications described, including hematoma evacuation and decompression for raised intracranial pressure;
- Medical necessity and appropriateness of microsurgical resection of acoustic neuroma, requiring MRI confirmation and qualifying symptoms;
- Appropriate level of care (intensive, inpatient, or ambulatory), expected clinical course, and identification of complications that warrant inpatient admission or stay extension following neurosurgical intervention.

The use of MCG Care Guidelines ensures consistency in reviewing the conditions to be met for coverage of neurosurgery services. Use of these criteria to supplement the coverage criteria noted above provides clinical benefits by helping ensure surgical services are not incorrectly denied when medically appropriate for a particular patient, nor incorrectly approved when not reasonable and necessary. The clinical benefits of using these criteria are highly likely to outweigh any clinical harms, including from inappropriate denials, because the criteria are unlikely to lead to inappropriate denials. The added criteria will provide numerous clinical benefits in helping ensure patients receive the appropriate level of care. In addition, use of the criteria may decrease inappropriate denials by creating a consistent set of evidence-based review criteria.

4. Summary of Clinical Evidence

Background

Craniotomy for Traumatic Brain Injury or Intracerebral Hemorrhage (MCG ORG: S-414 ISC)

Craniotomy for traumatic brain injury or intracerebral hemorrhage is an often-emergent neurosurgical procedure indicated for epidural hematoma, subdural hematoma, traumatic subarachnoid hemorrhage, cerebellar (posterior fossa) hemorrhage, supratentorial intracerebral hemorrhage or contusion, penetrating injury, decompression for intractable increased intracranial pressure, and compound depressed skull fracture. The guideline carries a goal length of stay of 5 days postoperative, reflecting inpatient and intensive perioperative care.

Acoustic Neuroma, Microsurgical Resection (MCG ORG: A-0176 AC)

Microsurgical resection of acoustic neuroma (vestibular schwannoma) is indicated when an acoustic neuroma is confirmed on MRI and the patient has qualifying symptoms such as brainstem compression, diplopia or visual loss, facial numbness or weakness, hydrocephalus, loss of coordination, sensorineural hearing loss, tinnitus, or trigeminal neuralgia. This MCG care guideline may overlap CMS guidance located in statutes and regulations; for Medicare Advantage beneficiaries, applicable NCDs, LCDs, and other regulations are followed first, and MCG criteria supplement but do not replace them.

Evidence Summary**Craniotomy for Traumatic Brain Injury or Intracerebral Hemorrhage (MCG ORG: S-414 ISC)**

The evidence for the clinical indications in this guideline includes 7 published peer-reviewed articles, 2 specialty society or other evidence-based guidelines, 1 Cochrane systematic review, and 3 book sections. Key evidence includes:

- For epidural or subdural hematoma, a specialty society guideline supports craniotomy and surgical evacuation.
- For acute subdural hematoma, a randomized trial of adult patients with traumatic acute subdural hematoma informs the surgical management approach incorporated into the guideline.
- Additional supported indications include traumatic subarachnoid hemorrhage, cerebellar and supratentorial intracerebral hemorrhage or contusion, penetrating injury, decompression for intractable increased intracranial pressure, and compound depressed skull fracture.
- Analysis of national hospital discharge data shows 33% of hospitalized adult patients undergoing craniotomy for traumatic brain injury or intracerebral hemorrhage were discharged in 5 days or less, supporting the MCG goal length of stay of 5 days postoperative.

Acoustic Neuroma, Microsurgical Resection (MCG ORG: A-0176 AC)

The evidence for the clinical indications in this guideline includes 14 published peer-reviewed articles and 1 specialty society or other evidence-based guideline. Key evidence includes:

- For operative management of acoustic neuroma (vestibular schwannoma), evidence demonstrates at least moderate certainty of at least moderate net benefit, supported by a review of meta-analyses and other research studies of treatment modalities.
- The criteria require MRI confirmation of the acoustic neuroma and the presence of one or more qualifying symptoms (e.g., brainstem compression, hydrocephalus, cranial neuropathy, facial weakness, sensorineural hearing loss) before microsurgical resection is appropriate, reserving surgery for symptomatic, confirmed disease.

Rationale (from MCG)

Use of these MCG care guidelines helps the clinician identify patient-specific complex clinical factors that determine the medical necessity and appropriate setting for neurosurgical services.

For the craniotomy guideline, the evidence-based clinical criteria assist the clinician in the decision to appropriately perform the procedure and to determine the appropriate level of care, including identification of complex factors that make it reasonable to expect a necessity for hospital care across 2 or more midnights and CMS Two-Midnight Rule exceptions for Medicare enrollees. For the acoustic neuroma guideline, the criteria help the clinician decide when microsurgical resection is appropriate based on MRI confirmation and qualifying symptoms. Use of these evidence-based clinical criteria ensures patients receive the most appropriate care for their specific condition, reduces unnecessary risks, promotes recovery, and provides a standard that can reduce disparities in care. Appropriate use of the evidence-based clinical criteria ensures Medicare patients receive full access to Medicare benefits without risk of delay or decreased access. These guidelines supplement but do not replace, modify, or supersede existing Medicare regulations or applicable National Coverage Determinations (NCDs) or Local Coverage Determinations (LCDs).

Related CMS Coverage Guidance (as cited in MCG 30th Edition):

- Code of Federal Regulations (CFR): 42 CFR 412.3; 42 CFR 419.22; 42 CFR 422.101 (craniotomy); 42 CFR 419.22; 42 CFR 422.101 (acoustic neuroma microsurgical resection)
- CMS IOM Publication 100-02, Medicare Benefit Policy Manual: Chapter 1 (Inpatient Hospital Services); Chapter 6 (Hospital Services Under Part B); Chapter 14 (Medical Devices); Chapter 15 (Covered Medical and Other Health Services); Chapter 16 (General Exclusions from Coverage)
- CMS IOM Publication 100-08, Medicare Program Integrity Manual, Chapter 6, Section 6.5
- Medicare Coverage Determinations: Medicare Coverage Database: <https://www.cms.gov/medicare-coverage-database/search.aspx>

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References with Citation Summary -- Acoustic Neuroma, Microsurgical Resection (MCG ORG: A-0176 AC, 30th Edition)

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