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Subject: Magnetic Resonance Imaging (MRI) Brain and Head

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DESCRIPTION:

Magnetic resonance imaging (MRI) is a radiation-free, noninvasive, technique used to produce high quality sectional images of the inside of the body in multiple planes. MRI uses natural magnetic properties of the hydrogen atoms in the body that emit radiofrequency signals when exposed to radio waves within a strong magnetic field. These signals are processed and converted by a computer into high-resolution, three-dimensional, tomographic images. Images and resolution produced by MRI is quite detailed. For some MRI, contrast materials (e.g., gadolinium, gadoteridol, non-ionic and low osmolar contrast media, ionic and high osmolar contrast media) are used to enable visualization of a body system or body structure.

The U.S. Food and Drug Administration's (FDA) cleared MRI systems for marketing through the 510(k) process. The Fonar Stand-Up MRI system received FDA marketing clearance in October 2000.

Summary and Analysis of Evidence: Magnetic resonance imaging (MRI) is a proven and well-established imaging modality in the evaluation and assessment of the brain. MRI of the brain is the most sensitive technique available because of its high sensitivity in exploiting inherent contrast differences of tissues as a result of variable magnetic relaxation properties and magnetic susceptibilities. MRI is a rapidly evolving technology, and ongoing technical advancements will continue to improve the diagnosis of brain disorders. This practice parameter outlines the principles for performing high-quality MRI of the brain. Indications for MRI of the brain include, but are not limited to: neoplastic conditions or other mass or mass-like conditions of the brain parenchyma, meninges, or cranium, vascular (ischemia, infarction, disease, malformations abnormalities, congenital disorders, trauma, hemorrhage, disorders (inflammatory, autoimmune, infectious, endocrine, evaluation (cranial nerve, headache with associated neurological findings, suspected brain structural abnormality), epilepsy, follow-up of treatment, and elevated intracranial pressure (ACR-ASNR-SPR, 2019).

POSITION STATEMENT:

Documentation Requirements

Documentation containing the medical necessity of the magnetic resonance imaging (MRI) of the brain/head and imaging results (e.g., images, clinical reports) should be maintained in the member's medical record. Documentation may be requested as part of the review process.

Magnetic Resonance Imaging (MRI) of the brain or head **meets the definition of medical necessity** for the following:

Evaluation of headache

- Chronic headache with a change in character/pattern.
- Cluster headaches or other trigeminal autonomic cephalalgias (TACs) (e.g., paroxysmal hemicrania, hemicrania continua, short-lasting unilateral neuralgiform headache attacks (SUNCT/SUNA) imaging is indicated to eliminate secondary causes.
- New acute headache, sudden onset with any of the following:
    - Personal or family history (sibling, parent, or child) of brain aneurysm or arteriovenous malformation (AVM)
    - < 48 hours of "worst headache in my life" or "thunderclap" headache
    - Prior history of stroke or intracranial bleed
    - Known coagulopathy
    - on anticoagulation.
- New onset of headache with any of the following:
    - Acute, new, or fluctuating neurologic deficits
    - History of cancer
    - Immunocompromised
    - Fever
    - Subacute head trauma
    - Pregnancy or puerperium
    - Age > 50
    - Severe unilateral headache with radiation to or from the neck, associated with suspicion of carotid or vertebral artery dissection
    - Related to activity or event (e.g., sexual activity, exertion, position) (new or progressively worsening)
    - Persistent or progressively worsening during a course of physician-directed treatment.
- Pediatric headache (persistent) with any of the following:
    - Occipital location

- Age < 6 years
- Symptoms suggest of increased intracranial pressure, such as recurring headaches after waking with or without associated nausea/vomiting
- Documented absence of family history of headache
- Severe headache in a child with an underlying disease that predisposes to intracranial pathology (e.g., immune deficiency, sickle cell disease, neurofibromatosis, history of neoplasm, coagulopathy, hypertension, congenital heart disease).

Evaluation of neurologic symptoms or deficits

- Acute, new, or fluctuating neurologic symptoms or deficits.

Evaluation of known or suspected stroke or vascular disease

- Known or suspected stroke with any acute, new, or fluctuating symptoms.
- Suspected stroke with a personal or first-degree family history (sibling, parent, or child) of aneurysm or known coagulopathy or on anticoagulation.
- Symptoms of transient ischemic attack (TIA).
- Evaluation of suspected acute subarachnoid hemorrhage (SAH).
- Follow-up for known hemorrhage, hematoma, or vascular abnormalities.
- Suspected central venous thrombosis.
- Evaluation of neurological signs or symptoms in sickle cell disease.

Evaluation of known or suspected trauma

- Known or suspected trauma or injury to the head with documentation of one or more of the following (acute, new, or fluctuating):
  - Focal neurologic findings
  - Motor changes
  - Mental status changes
  - Amnesia
  - Vomiting
  - Seizures
  - Headache
  - Signs of increased intracranial pressure.
- Known coagulopathy or on anticoagulation.
- Known or suspected skull fracture by physical exam and positive x-ray.
- Post concussive syndrome if persistent or disabling symptoms and imaging has not been performed.

- Subacute or chronic traumatic brain injury with new cognitive and/or neurologic deficit.

Evaluation of suspected brain tumor, mass or metastasis

- Suspected brain tumor with any acute, new or fluctuating neurologic symptoms or deficits.
- Suspected recurrence or metastasis or intracranial involvement in members with a history of cancer.
- Langerhans cell histiocytosis with visual, neurological, polyuria or polydipsia, or other endocrine abnormality, suspected craniofacial bone lesions, aural discharge, or suspected hearing impairment/mastoid involvement.

Suspected pituitary tumors

- Suspected pituitary tumor with any of the following:
  - Neurologic findings
  - Suspected hypofunctioning pituitary gland based on hormonal testing
  - Suspected hyperfunctioning pituitary gland based on hormonal testing
  - Central diabetes insipidus
  - Precocious puberty in a child (male < 9; female < 8), with hormonal studies suggesting a central cause and evidence of an accelerated bone age on x-ray
  - Pituitary apoplexy with sudden onset of neurological and hormonal symptoms (insufficiency).

Evaluation of known brain tumor, mass, or metastasis

- Follow-up of known malignant brain tumor.
- Suspected recurrence with prior history of CNS cancer based on neurological symptoms or examination findings.
- Member with history of central nervous system (CNS) cancer (either primary or secondary) and a recent course of chemotherapy, radiation therapy (to the brain), or surgical treatment within the last 2 years.
- Follow-up of known non-malignant brain tumor/lesion if new/changing signs or symptoms or complicating factors.
- Follow-up of known meningioma
  Note: The following may be appropriate for follow-up for meningioma: < 2 cm annually for 3 years and at 5 years; 2 cm annually for 3 years and at 5 years and 10 years. Multiple meningiomas (annually). After treatment (surgery or radiotherapy), post-operative if concern for residual tumor, every 6-12 months, and annually for 3-5 years.
- Follow-up of known pituitary adenoma with new neuroendocrine signs or symptoms.

  Note: The following may be appropriate for follow-up: Functioning adenoma (to assess response to treatment and 1-year follow-up after drug holiday). Asymptomatic macroadenoma (≥ 10mm)

follow-up every 6-18 months, post-surgical follow-up 1-2 years after surgery. Asymptomatic, non-functioning microadenoma < 10mm repeat in one year; if stable, repeat every 2-3 years.

- Follow-up of known pineal cyst (> 5mm) if there are atypical features or symptoms (e.g., headaches, gaze paresis, ataxia, papilledema, nausea/vomiting).
- Follow-up of known arachnoid cyst.

  Note: The following may be appropriate: < 4 years old, serial imaging. > 4 years old, repeat imaging only if newly symptomatic (e.g., headaches, increased intracranial pressure, hydrocephalus, local mass effect, seizures, visual/endocrine dysfunction).
- Tumor evaluation and monitoring in neurocutaneous syndromes.
- To assess treatment response and surveillance of known brain lesions Langerhans cell histiocytosis.

Screening for known non-CNS cancer

Note: Screening may be appropriate if CNS symptoms present.

Screening of hereditary cancer syndromes

Note: Screening may be appropriate for the following: Li-Fraumeni syndrome (annually). Von Hippel-Lindau syndrome (every 2 years, starting at age of 8 years). Tuberous sclerosis (every 1-3 years, until the age of 25 years). Multiple endocrine neoplasia type 1 (MEN1) (every 3-5 years, starting at the age of 5 years). Neurofibromatosis type 2 (NF2)-brain internal auditory canal (IAC) (annually starting at the age of 10 years). Sturge-Weber syndrome (after the age of 1 year to rule out intracranial involvement; in individuals < 1 year, if symptomatic).

Evaluation of known or suspected seizure disorder

- New onset of an unprovoked seizure in adults.
- Newly identified change in seizure activity/pattern.
- Known seizure disorder without previous imaging.
- Medically refractory epilepsy.
- Imaging indications for new onset seizures in the pediatric population
  - Abnormal neurological exam, especially a postictal focal deficit
  - Significant developmental delay
  - Focal onset
  - EEG shows focal or suspected structural abnormalities
  - 1 year of age.

Evaluation of suspected multiple sclerosis (MS)

- Evaluation of member with neurologic symptoms or deficits suspicious for MS with:

- A clinically isolated syndrome (optic neuritis, transverse myelitis, or brain stem syndrome); **OR**
- Recurrent episodes of variable neurological signs or symptoms not attributable to another cause.

- To demonstrate dissemination in time for diagnosis (6-12 months for high risk, 12-24 months for low risk).

Evaluation of known multiple sclerosis (MS)

- To establish a new baseline.
- Prior to starting or switching disease-modifying therapy.
- Every 1-2 years while on disease-modifying therapy to assess for subclinical disease activity, less frequently when stable for 2-3 years.
- New signs or symptoms suggest an exacerbation or unexpected worsening of clinical symptoms.
- Progressive multifocal leukoencephalopathy (PML) surveillance for members on natalizumab (Tysabri) (or other drugs with similar risk of PML).

  Note: 12 months after the start of treatment. Further surveillance MRI scanning timing is based on anti-JCV antibody status. If anti-JCV antibody negative, annually. If anti-JCV antibody positive and antibody index < 1.5. every 6 months. If anti-JCV antibody positive and antibody index > 1.5, every 3-4 months.

Evaluation of known or suspected inflammatory disease or infection

- Suspected intracranial abscess or brain infection.
- Meningitis with positive signs and symptoms.
- Suspected encephalitis.
- Endocarditis with suspected septic emboli.
- Suspected temporal arteritis in a member > 50 with temporal headache, abrupt visual changes, jaw claudication, temporal artery tenderness, constitutional symptoms or elevated erythrocyte sedimentation rate (ESR); AND
  - Negative initial work-up (color Doppler ultrasonography or biopsy); OR
  - Atypical features, failure to response to treatment or concern for intracranial involvement.
- Central nervous system (CNS) involvement in members with known or suspected vasculitis or autoimmune disease with abnormal inflammatory markers or autoimmune antibodies.
- Atypical features or concern for intracranial involvement.
- Suspected primary CNS vasculitis based on neurological signs and symptoms with completed infectious/inflammatory lab work-up.

- Immunocompromised member (e.g., transplant recipients, HIV, primary immunodeficiency syndromes, hematologic malignancies) with focal neurologic symptoms, headaches, behavioral, cognitive or personality changes.

Evaluation of clinical assessment documenting cognitive impairment of unclear cause

Note: Mental status score of either Mini-Mental State Exam (MMSE) or Montreal Cognitive Assessment (MoCA) of less than 26 or other similar mental status instruments* showing at least mild cognitive impairment and a completed basic metabolic workup (such as thyroid function testing, liver function testing, complete blood count, electrolytes, and B12). * Other examples of mental status instruments: Ottawa 3DY (O3DY), Brief Alzheimer's Screen (BAS), Blessed Dementia Scale (BDS), caregiver completed AD8 (cAD8), Brief Cognitive Rating Scale (BCRS), Clinical Dementia Rating (CDR).

Evaluation of movement disorders

- Evaluation of suspected Parkinson's with atypical feature or unresponsive to levodopa.
- Evaluation of new non-Parkinson symptoms in known Parkinson's disease complicating the evaluation of the current condition.
- Evaluation of other movement disorder to exclude a structural lesion (e.g., suspected Huntington disease, chorea, atypical parkinsonian syndromes, hemiballismus, secondary dystonia).

Evaluation of cranial nerve and visual abnormalities

- Anosmia (loss of smell) or dysosmia documented by objective testing that is persistent and of unknown origin.
- Optic neuritis.
- Abnormal eye findings on physical or neurologic examination (e.g., papilledema, pathologic nystagmus, optic atrophy, ocular nerve palsies, new onset anisocoria, visual field deficit)..
- Binocular diplopia with concern for intracranial pathology.
- Childhood strabismus with development delay or abnormal fundoscopic exam to rule out intracranial abnormalities
- Horner's syndrome with symptoms localizing the lesion to the central nervous system.
- Trigeminal neuralgia or other trigeminal autonomic cephalgias, notably in those with atypical presentation.
- Bell's palsy (if atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset).
- Hemifacial spasm.
- Other objective cranial nerve palsy (CN IX-XII).
- Bulbar symptoms (e.g., difficulty in chewing, weakness of the facial muscles, dysarthria, palatal weakness, dysphagia, and dysphonia and/or signs (e.g., atrophy and fasciculations of the tongue and absent gag reflex).

- Pseudobulbar symptoms (e.g., dysphagia, dysarthria, facial weakness, sudden, stereotyped emotional outbursts that are not reflective of mood and/or signs (i.e., spastic tongue and exaggerated gag/jaw jerk)).

Evaluation of known or suspected congenital abnormality

- Known or suspected congenital abnormality with any acute, new, or fluctuating neurologic, motor, or mental status changes.
- Evaluation of macrocephaly in an infant/child with previously abnormal ultrasound (US), abnormal neurodevelopmental examination, signs of increased intracranial pressure (ICP) or closed anterior fontanelle.
- Evaluation of microcephaly in an infant or child.
- Follow-up shunt evaluation within six (6) months of placement or one (1) year follow up and/or with neurologic symptoms.
- Evaluation of intracranial soft tissue due to craniosynostosis and other skull deformities.
- Suspected or known hydrocephalus.
- Prior treatment or treatment planned for congenital abnormality.

Cerebral spinal fluid (CSF) abnormalities

- Evaluation of suspected hydrocephalus.
- Known hydrocephalus.
- Initial evaluation of a suspected Arnold Chiari malformation.
- Follow-up imaging of a known type II or type III Arnold Chiari malformation (for Arnold Chiari type I, follow-up imaging only if new or changing signs/symptoms).
- Initial evaluation for a known syrinx or syringomyelia.
- Known or suspected normal pressure hydrocephalus (NPH)
    - With symptoms of gait difficulty, cognitive disturbance, and urinary incontinence.
- Follow-up shunt evaluation
    - With neurologic symptoms that suggest shunt malfunction.
- Evaluation of known or suspected cerebrospinal fluid (CSF) leakage.
- Cisternography for intermittent and complex CSF rhinorrhea/otorrhea.
- Suspected spontaneous intra-cranial hypotension with distinct postural headache.
- CSF flow study for evaluation and management of CSF flow disorders.

Pre-operative/procedural evaluation for brain/skull surgery

- Pre-operative evaluation for a planned surgery or procedure.

Post-operative/procedural evaluation

- A follow-up study may be needed to help evaluate a member's progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.

Other indications for brain MRI

- Vertigo associated with any of the following:
  - Signs or symptoms suggestive of a CNS lesion (ataxia, visual loss, double vision, weakness or a change in sensation)
  - Progressive unilateral hearing loss
  - Risk factors for cerebrovascular disease with concern for stroke
  - After full neurologic examination and vestibular testing with concern for central vertigo.
- Diagnosis of central sleep apnea on polysomnogram
  - Children > 1 year
  - Adults in the absence of heart failure, chronic opioid use, high altitude, or treatment emergent central sleep apnea and concern for a central neurological cause (Chiari malformation, tumor, infectious/inflammatory disease) or with an abnormal neurological exam.
- Syncope with clinical concern for seizure or associated neurological signs or symptoms.
- Cyclical vomiting syndrome or abdominal migraine with any localizing neurological symptoms.
- Soft tissue mass of the head with nondiagnostic initial evaluation (ultrasound and/or radiograph).
- Psychological changes with neurological deficits on exam or after completion of a full neurological assessment that suggests a possible neurologic cause.
- Global developmental delay or developmental delay with abnormal neurological examination in a child < 18 years.
- Cerebral palsy if etiology has not been established in the neonatal period, there is change in the expected clinical or developmental profile or concern for progressive neurological disorder.
- Brief resolved unexplained event (BRUE) formerly apparent life-threatening event (ALTE) in infants < 1 year with concern for neurological cause based on history and exam.

Brain MRI with internal auditory canal (IAC)

- Unilateral non-pulsatile tinnitus.
- Pulsatile tinnitus.
- Suspected acoustic neuroma (schwannoma) or cerebellar pontine angle tumor.
- Suspected cholesteatoma.
- Suspected glomus tumor.

- Asymmetric sensorineural hearing loss on audiogram.
- CSF otorrhea (MRI for intermittent leak, CT for active leaks).
- Clinical suspicion of acute mastoiditis as a complication of acute otitis media with intracranial complications.
- Bell's palsy for evaluation of the extracranial nerve course.

BILLING/CODING INFORMATION:

CPT Coding:

70551	Magnetic resonance (e.g., proton) imaging, brain (including brain stem); without contrast material
70552	Magnetic resonance (e.g., proton) imaging, brain (including brain stem); with contrast material(s)
70553	Magnetic resonance (e.g., proton) imaging, brain (including brain stem); without contrast material, followed by contrast material(s) and further sequences

HCPCS Coding:

S8042	Magnetic resonance imaging (MRI), low-field

REIMBURSEMENT INFORMATION:

Reimbursement for MRI imaging (70551-70553) performed on the same anatomical area is limited to one (1) MRI imaging (70551-70553) within a 6-month period. MRI imaging in excess of one (1) within a 6-month period is subject to medical review for medical necessity. Documentation should include radiology reason for study, radiology comparison study-date and time, radiology comparison study observation, radiology impression, and radiology study recommendation.

Reimbursement for MRI imaging (70551-70553) for an oncologic condition undergoing active treatment or active treatment completed within the previous 12 months on the same anatomical area is limited to four (4) MRI imaging (70551-70553) within a 12-month period. MRI imaging (70551-70553) for an oncologic condition in excess of four (4) within a 12-month period are subject to medical review of documentation to support medical necessity. Documentation should include radiology reason for study, radiology comparison study-date and time, radiology comparison study observation, radiology impression, and radiology study recommendation.

Re-imaging or additional imaging of the brain or head due to poor contrast enhanced exam or technically limited exam is the responsibility of the imaging provider.

Stand-Up MRI/Sitting MRI

Stand-up MRI and sitting MRI may be reported like a standard MRI. No additional payment will be made for stand-up MRI or sitting MRI.

LOINC Codes:

The following information may be required documentation to support medical necessity: physician history and physical, physician progress notes, plan of treatment and reason for magnetic resonance imaging (MRI) brain and head.

Documentation Table	LOINC Codes	LOINC Time Frame Modifier Code	LOINC Time Frame Modifier Codes Narrative
Physician history and physical	28626-0	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Attending physician progress note	18741-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Plan of treatment	18776-5	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology reason for study	18785-6	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study-date and time	18779-9	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology comparison study observation	18834-2	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-study observation	18782-3	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology-impression	19005-8	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim
Radiology study-recommendation (narrative)	18783-1	18805-2	Include all data of the selected type that represents observations made six months or fewer before starting date of service for the claim

PROGRAM EXCEPTIONS:

Federal Employee Plan (FEP): Follow FEP guidelines.

Medicare Advantage products:

No Local Coverage Determination (LCD) was found at the time of the last guideline reviewed date.

The following National Coverage Determination (NCD) was reviewed on the last guideline reviewed date: Magnetic Resonance Imaging (MRI), (220.2) located at cms.gov.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at Coverage Protocol Exemption Request.

DEFINITIONS:

Acoustic neuroma: a progressively enlarging, benign tumor, usually within the internal auditory canal arising from Schwann cells of the vestibular division of the eighth cranial nerve; the symptoms, which vary with the size and location of the tumor, may include hearing loss, headache, disturbances of balance and gait, facial numbness or pain, and tinnitus. It may be unilateral or bilateral (neurofibromatosis).

Arnold Chiari malformation: herniation of the cerebellar tonsils and vermis through the foramen magnum into the spinal canal. It is always associated with lumbosacral myelomeningocele, and hydrocephalus and mental defects are common (also called Arnold-Chaiari deformity or syndrome).

Encephalopathy: any degenerative disease of the brain.

Nystagmus: an involuntary, rapid, rhythmic movement of the eyeball, which may be horizontal, vertical, rotatory, or mixed.

Syringomyelia: a rare disorder that causes a cyst (syrinx) to form in the spinal cord.

Syrinx: an abnormal cavity in the spinal cord in syringomyelia.

RELATED GUIDELINES:

Functional MRI, 04-70540-10

Magnetic Resonance Spectroscopy (MRS), 04-70540-07

Magnetic Resonance Imaging (MRI) Orbit, Face, Temporomandibular Joint (TMJ) and Neck, 04-70540-12

Magnetic Resonance Imaging (MRI) Chest & Cardiac, 04-70540-13

Magnetic Resonance Imaging (MRI) Abdomen and Pelvis, 04-70540-14

Magnetic Resonance Imaging (MRI) Upper Extremity, 04-70540-15

Magnetic Resonance Imaging (MRI) Lower Extremity, 04-70540-16

Magnetic Resonance Imaging (MRI) Spine (Cervical, Thoracic, Lumbar), 04-70540-17

Magnetic Resonance Imaging (MRI) of the Breast, 04-70540-09

OTHER:

Other names used to report MRI:

Nuclear Magnetic Resonance (NMR)
Open MRI

Other names used to report Positional MRI:

Position MRI (pMRI)
Sitting MRI
Stand-Up MRI
Standing MRI
Weight-bearing MRI

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17. Expert Panel on Neurological Imaging: Shih RY, Burns J, Ajam AA, et al. ACR Appropriateness Criteria® Head Trauma: 2021 Update. J Am Coll Radiol. 2021 May;18(5S): S13-S36.
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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 04/24/25.

GUIDELINE UPDATE INFORMATION:

07/01/07	New Medical Coverage Guideline.
01/21/08	Updated Program Exceptions.
07/15/08	Scheduled review. No change in position statement. Added functional MRI to related guideline section. Updated references and related Internet links.

05/21/09	Removed Federal Employee Plan (FEP) from Florida Blue Radiology Management program exception statement. Added FEP program exception statement: FEP is excluded from the National Imaging Associates (NIA) review; follow FEP guidelines.
07/01/09	Updated Florida Blue Radiology Management program exception; added BlueSelect.
01/01/10	Annual HCPCS coding update: deleted 70557, 70558, and 70559. Revised Florida Blue Radiology Management program exception section.
03/15/10	Updated indications. Add program exception for Medicare Advantage products. Updated references.
07/15/10	Code update; deleted 77084.
10/01/11	Revision; formatting changes.
04/15/12	Scheduled review. Revised, deleted and added position statement: Revised aneurysm or AVM, congenital abnormality, headache inflammatory disease or infection, multiple sclerosis, stroke, trauma, tumor or rule out metastasis and other section. Deleted but is not limited to, CNS signs or symptoms and tumor or rule out metastasis. Deleted Medicare Advantage product ICD-9 diagnosis codes. Added brain tumor/metastasis, evaluation of neurological deficits, Parkinson's disease and post-operative evaluation. Updated references.
11/15/13	Scheduled review; deleted screening for aneurysm in polycystic kidney disease, Ehlers Danlos syndrome, fibromuscular dysplasia or aortic coarctation, tumor or rule out metastasis; added pre-operative evaluation, suspected acoustic neuroma (Schwannoma) or cerebellar pontine angle tumor with any of the following signs and symptoms: unilateral hearing loss by audiometry, headache, disturbed balance or gait, tinnitus, facial weakness, altered sense of taste, suspected glomus tumor, and acute onset or asymmetrical sensory neurological hearing loss. Updated definitions, program exceptions and reference sections.
05/15/14	Added limitation statement for an oncologic condition; limited to four (4) computed tomography within a 12-month period.
01/01/15	Scheduled review; maintain position statement. Updated references.
02/15/20	Review/revision. Revised position statement for: multiple sclerosis, seizure disorder, movement disorders, trauma, headache, brain tumor, mass or metastasis, stroke, inflammatory disease or infection, congenital abnormality, pre-operative evaluation for brain/skull surgery, post-operative/procedural evaluation and other indications for brain MRI. Added position statement for: neurologic symptoms or deficits, cognitive impairment clinical assessment, combination studies for initial pre-therapy staging of cancer or active monitoring or evaluation, normal pressure hydrocephalus, indications for brain MRI with internal auditory canal (IAC) and indications for combination studies (brain MRI/neck MRA; brain MRA; cervical MRI; orbit MRI). Updated references.
05/15/22	Review/revision. Revised and expanded criteria for: headache, suspected: stroke, brain tumor, mass or metastasis, known brain tumor, mass or metastasis, known or suspected seizure disorder, multiple sclerosis, inflammatory disease or infection, movement disorder and other indications for brain MRI. Expanded criteria for: seizure disorder, pre-operative evaluation for brain/skull surgery, brain MRI with internal auditory canal and combination studies. Added indication and criteria for: suspected pituitary tumors, evaluation of movement disorder, evaluation of cranial nerve and visual abnormalities,

	cerebral spinal fluid abnormalities. Added screening for: known non-CNS cancer and hereditary cancer syndromes. Revised cognitive impairment and known or suspected congenital abnormality. Updated references.
05/20/22	Revised combination studies.
06/03/22	Clarified combination studies.
07/01/22	Revision to Program Exceptions section.
09/30/23	Review: Position statements and references updated.
05/15/24	Review; no change in position statement. Updated references.
04/15/25	Review; no change in position statement.