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Clinical Appropriateness Guidelines

Advanced Imaging

Appropriate Use Criteria: Imaging of the Head and Neck

Proprietary

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Description and Application of the Guidelines

The Carelon Clinical Appropriateness Guidelines (hereinafter “the Carelon Clinical Appropriateness Guidelines” or the “Guidelines”) are designed to assist providers in making the most appropriate treatment decision for a specific clinical condition for an individual. The Guidelines establish objective and evidence-based criteria for medical necessity determinations, where possible, that can be used in support of the following:

- To establish criteria for when services are medically necessary
- To assist the practitioner as an educational tool
- To encourage standardization of medical practice patterns
- To curtail the performance of inappropriate and/or duplicate services
- To address patient safety concerns
- To enhance the quality of health care
- To promote the most efficient and cost-effective use of services

The Carelon guideline development process complies with applicable accreditation and legal standards, including the requirement that the Guidelines be developed with involvement from appropriate providers with current clinical expertise relevant to the Guidelines under review and be based on the most up-to-date clinical principles and best practices. Resources reviewed include widely used treatment guidelines, randomized controlled trials or prospective cohort studies, and large systematic reviews or meta-analyses. Carelon reviews all of its Guidelines at least annually.

Carelon makes its Guidelines publicly available on its website. Copies of the Guidelines are also available upon oral or written request. Additional details, such as summaries of evidence, a list of the sources of evidence, and an explanation of the rationale that supports the adoption of the Guidelines, are included in each guideline document.

Although the Guidelines are publicly available, Carelon considers the Guidelines to be important, proprietary information of Carelon, which cannot be sold, assigned, leased, licensed, reproduced or distributed without the written consent of Carelon. Use of the Guidelines by any external AI entity without the express written permission of Carelon is prohibited.

Carelon applies objective and evidence-based criteria, and takes individual circumstances and the local delivery system into account when determining the medical appropriateness of health care services. The Carelon Guidelines are just guidelines for the provision of specialty health services. These criteria are designed to guide both providers and reviewers to the most appropriate services based on a patient’s unique circumstances. In all cases, clinical judgment consistent with the standards of good medical practice should be used when applying the Guidelines. Guideline determinations are made based on the information provided at the time of the request. It is expected that medical necessity decisions may change as new information is provided or based on unique aspects of the patient’s condition. The treating clinician has final authority and responsibility for treatment decisions regarding the care of the patient and for justifying and demonstrating the existence of medical necessity for the requested service. The Guidelines are not a substitute for the experience and judgment of a physician or other health care professionals. Any clinician seeking to apply or consult the Guidelines is expected to use independent medical judgment in the context of individual clinical circumstances to determine any patient’s care or treatment.

The Guidelines do not address coverage, benefit or other plan specific issues. Applicable federal and state coverage mandates take precedence over these clinical guidelines, and in the case of reviews for Medicare Advantage Plans, the Guidelines are only applied where there are not fully established CMS criteria. If requested by a health plan, Carelon will review requests based on health plan medical policy/guidelines in lieu of the Carelon Guidelines. Pharmaceuticals, radiotracers, or medical devices used in any of the diagnostic or therapeutic interventions listed in the Guidelines must be FDA approved or conditionally approved for the intended use. However, use of an FDA-approved or conditionally approved product does not constitute medical necessity or guarantee reimbursement by the respective health plan.

The Guidelines may also be used by the health plan or by Carelon for purposes of provider education, or to review the medical necessity of services by any provider who has been notified of the need for medical necessity review, due to billing practices or claims that are not consistent with other providers in terms of frequency or some other manner.

General Clinical Guideline

Clinical Appropriateness Framework

Critical to any finding of clinical appropriateness under the guidelines for a specific diagnostic or therapeutic intervention are the following elements:

- Prior to any intervention, it is essential that the clinician confirm the diagnosis or establish its pretest likelihood based on a complete evaluation of the patient. This includes a history and physical examination and, where applicable, a review of relevant laboratory studies, diagnostic testing, and response to prior therapeutic intervention.
- The anticipated benefit of the recommended intervention is likely to outweigh any potential harms, including from delay or decreased access to services that may result (net benefit).
- Widely used treatment guidelines and/or current clinical literature and/or standards of medical practice should support that the recommended intervention offers the greatest net benefit among competing alternatives.
- There exists a reasonable likelihood that the intervention will change management and/or lead to an improved outcome for the patient.

Providers may be required to submit clinical documentation in support of a request for services. Such documentation must a) accurately reflect the clinical situation at the time of the requested service, and b) sufficiently document the ordering provider's clinical intent.

If these elements are not established with respect to a given request, the determination of appropriateness will most likely require a peer-to-peer conversation to understand the individual and unique facts that would justify a finding of clinical appropriateness. During the peer-to-peer conversation, factors such as patient acuity and setting of service may also be taken into account to the extent permitted by law.

Simultaneous Ordering of Multiple Diagnostic or Therapeutic Interventions

Requests for multiple diagnostic or therapeutic interventions at the same time will often require a peer-to-peer conversation to understand the individual circumstances that support the medical necessity of performing all interventions simultaneously. This is based on the fact that appropriateness of additional intervention is often dependent on the outcome of the initial intervention.

Additionally, either of the following may apply:

- Current literature and/or standards of medical practice support that one of the requested diagnostic or therapeutic interventions is more appropriate in the clinical situation presented; or
- One of the diagnostic or therapeutic interventions requested is more likely to improve patient outcomes based on current literature and/or standards of medical practice.

Repeat Diagnostic Intervention

In general, repeated testing of the same anatomic location for the same indication should be limited to evaluation following an intervention, or when there is a change in clinical status such that additional testing is required to determine next steps in management. At times, it may be necessary to repeat a test using different techniques or protocols to clarify a finding or result of the original study.

Repeated testing for the same indication using the same or similar technology may be subject to additional review or require peer-to-peer conversation in the following scenarios:

- Repeated diagnostic testing at the same facility due to technical issues

- Repeated diagnostic testing requested at a different facility due to provider preference or quality concerns
- Repeated diagnostic testing of the same anatomic area based on persistent symptoms with no clinical change, treatment, or intervention since the previous study
- Repeated diagnostic testing of the same anatomic area by different providers for the same member over a short period of time

Repeat Therapeutic Intervention

In general, repeated therapeutic intervention in the same anatomic area is considered appropriate when the prior intervention proved effective or beneficial and the expected duration of relief has lapsed. A repeat intervention requested prior to the expected duration of relief is not appropriate unless it can be confirmed that the prior intervention was never administered. Requests for on-going services may depend on completion of previously authorized services in situations where a patient's response to authorized services is relevant to a determination of clinical appropriateness.

Imaging of the Head and Neck

General Information/Overview

Scope

These guidelines address advanced imaging of the head and neck in both adult and pediatric populations. For interpretation of the Guidelines, and where not otherwise noted, “adult” refers to persons age 19 and older, and “pediatric” refers to persons age 18 and younger. Where separate indications exist, they are specified as Adult or Pediatric. Where not specified, indications and prerequisite information apply to persons of all ages.

See the Coding section for a list of modalities included in these guidelines.

Technology Considerations

There are a number of advanced imaging modalities available to visualize structures of the head and neck. Choice of imaging in this area is determined primarily by anatomic location.

CT orbit/sella/posterior fossa utilizes specific protocols depending on the clinical indication. Coverage may include the internal auditory canals, posterior fossa, sella turcica, orbits and temporal bone, and mastoid air cells. With capability for high-resolution osseous imaging, CT can provide detailed anatomic depiction of the temporal bone anatomy, including the middle and inner ear structures. CT is usually effective at demonstrating bony changes from a sellar, parasellar, or orbital mass.

CT of the paranasal sinuses and maxillofacial area is used to evaluate the sinuses, facial structures, and maxillary regions. Individual scan coverage depends on the specific clinical request, but generally includes images through the entire frontal, ethmoid, maxillary and sphenoid sinuses. Coverage may be extended to include the mandible and temporomandibular joint in select cases and depending on the clinical indication. CT sections may be obtained in 1 or 2 (usually coronal and axial) planes.

CT soft tissue neck provides axial images from the skull base to the clavicles. Coverage includes the submandibular area and salivary glands as well as the pharynx, larynx, and proximal trachea. Thyroid and parathyroid glands are also included.

Disadvantages of CT include exposure to ionizing radiation and risks associated with infusion of iodinated contrast media, including allergic reactions or renal compromise.

MRI orbit/face/neck utilizes protocols tailored to the clinical indication. Coverage may include facial structures; larynx and subglottic regions; nasopharynx, oropharynx and hypopharynx; neck soft tissues, surrounding the airway and glands; optic nerve; orbit; salivary glands; sinuses; thyroid and parathyroid gland.

MRI is usually preferred over CT for evaluation of the sella turcica and visual pathways. For imaging of the internal auditory canals, MRI brain is the appropriate study (see Brain Imaging guidelines).

MRI temporomandibular joint (TMJ) is a bilateral study including open and closed mouth views, often performed with surface coils. Images may be obtained in axial, (oblique) sagittal, and (oblique) coronal planes.

The presence of implantable devices such as pacemakers or defibrillators, a potential need for sedation in pediatric patients, and claustrophobia are the main limitations of MRI. Infusion of gadolinium may also confer an unacceptable risk in persons with advanced renal disease.

Definitions

Phases of the care continuum are broadly defined as follows:

- **Screening** – testing in the absence of signs or symptoms of disease

- **Diagnosis** – testing based on a reasonable suspicion of a particular condition or disorder, usually due to the presence of signs or symptoms
- **Management** – testing to direct therapy of an established condition, which may include preoperative or postoperative imaging, or imaging performed to evaluate the response to nonsurgical intervention
- **Surveillance** – periodic assessment following completion of therapy, or for monitoring known disease that is stable or asymptomatic

Clinical Indications

The following section includes indications for which advanced imaging of the head and neck is considered medically necessary, along with prerequisite information and supporting evidence where available. Indications, diagnoses, or imaging modalities not specifically addressed are considered not medically necessary.

It is recognized that imaging often detects abnormalities unrelated to the condition being evaluated. Such findings must be considered within the context of the clinical situation when determining whether additional imaging is required.

Congenital and Developmental Conditions

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear
- MRI orbit, face, and neck (soft tissue)
- CT paranasal sinuses and maxillofacial area
- CT soft tissue neck

Infectious and Inflammatory Conditions

Sinusitis/rhinosinusitis

Advanced imaging is considered medically necessary in **ANY** of the following scenarios:

Screening

- A single study prior to chemotherapy or bone marrow or stem cell transplant

Diagnosis

- Initial evaluation of rhinosinusitis or barosinusitis not responsive to at least 3 weeks of acceptable medical therapy including **EITHER** of the following:
 - trial of nasal saline irrigation and intranasal steroids
 - trial of nasal saline irrigation **OR** intranasal steroids, and at least two other forms of sinonasal medical therapy
- Complications of sinusitis (suspected or related to invasive fungal sinusitis, or in setting of immune suppression)

Management

- Repeat imaging when needed to direct surgical management, or when signs or symptoms worsen
- Preoperative planning for functional endoscopic sinus surgery (e.g., InstaTrak) in **ANY** of the following scenarios:

- Revision sinus surgery
- Sino-nasal polyposis
- Complex or distorted sino-nasal anatomy
- Disease abutting the skull base
- Sinus disease predominant in the frontal, posterior ethmoid, or sphenoid sinuses
- Evaluation of postoperative complications

IMAGING STUDY

- CT paranasal sinuses and maxillofacial area

Rationale

ADULT SINUSITIS

Rhinosinusitis is defined as symptomatic inflammation of the paranasal sinuses and nasal cavity. The term rhinosinusitis is preferred because sinusitis is almost always accompanied by inflammation of the contiguous nasal mucosa. Twelve percent of the U.S. population (nearly 1 in 8 adults) reported being diagnosed with rhinosinusitis.¹

Acute uncomplicated rhinosinusitis is defined as rhinosinusitis lasting less than 4 weeks, without clinically evident extension of the inflammation outside the paranasal sinuses and nasal cavity at the time of diagnosis, e.g., no neurologic, ophthalmologic, or soft tissue involvement.¹ There is strong, consistent specialty society consensus that imaging should not be performed for acute uncomplicated sinusitis. The American Academy of Otolaryngology–Head and Neck Surgery states that, as long as the clinical diagnostic criteria are met for patients with acute uncomplicated rhinosinusitis, imaging of the paranasal sinuses is unnecessary. Clinicians should offer either watchful waiting (without antibiotics) or prescribe initial antibiotic therapy for adults with uncomplicated acute bacterial rhinosinusitis and should not obtain radiographic imaging for acute bacterial rhinosinusitis unless a complication or alternative diagnosis is suspected.¹

Complications of sinusitis may be intraorbital (such as orbital cellulitis, cavernous sinus thrombosis, or subperiosteal or orbital abscess) or intracranial (such as encephalitis, cerebritis, meningitis, abscess, or venous sinus thrombosis). Osteomyelitis and sinonasal mucocele or mucopyocele are also potential complications of sinusitis. Suggestive findings on physical examination include proptosis, visual changes, severe headache, abnormal extraocular movements, changes in mental status, and periorbital inflammation, edema, or erythema.¹

The American College of Radiology states that either MRI with and without contrast or CT sinus with and/or without contrast is usually appropriate. MRI provides superior visualization of the orbits and intracranial soft tissues, and CT is useful when osteomyelitis is suspected.²

The primary role of advanced imaging in chronic rhinosinusitis and recurrent acute rhinosinusitis (defined as 4 or more separate episodes of acute sinusitis within a year) is to evaluate the anatomy of the paranasal sinuses prior to surgery. Status of the paranasal sinus drainage pathways including occlusion of the ostiomeatal units, frontoethmoidal or sphenoethmoidal drainage pathways help determine whether functional endoscopic sinus surgery will be beneficial. In addition, anatomic variants are important to know in advance of endoscopic surgery to reduce postoperative complication risk. For instance, an anatomically depressed or asymmetric cribriform plate increases the risk of intracranial penetration, while bony dehiscence of the carotid canal or pneumatization of the sphenoid and clinoids increases the risk of vascular or optic nerve injury. CT without contrast is optimal for visualization of paranasal sinus bony anatomy and is the imaging method of choice.² The American Academy of Otolaryngology–Head and Neck Surgery discourages the use of MRI, citing the potential for overdiagnosis. They also state that cone-beam CT scanning is an alternative to traditional CT imaging, and the indications are the same; like traditional CT, cone-beam CT should not be used for diagnosing or managing uncomplicated acute bacterial rhinosinusitis.¹

Clinicians should recommend saline nasal irrigation, topical intranasal corticosteroids, or both for symptom relief of chronic rhinosinusitis.¹ The presence of nonspecific inflammation of the paranasal sinuses would likely lead to repeat imaging requests, due to obscuration of the underlying anatomy. Therefore, even though a patient has been symptomatic for 12 weeks, the accurate diagnosis of chronic sinusitis will require a trial of medication to reduce inflammation in the paranasal sinuses prior to imaging.

Infectious conditions – not otherwise specified

Applies to conditions not otherwise referenced in Head and Neck Imaging.

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear
- MRI orbit, face, and neck (soft tissue)
- CT paranasal sinuses and maxillofacial area
- CT soft tissue neck
- MRI temporomandibular joint

Inflammatory conditions – not otherwise specified

Includes Wegener's granulomatosis (granulomatosis with polyangiitis) and neuromyelitis optica spectrum disorders (NMOSD).

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear
- MRI orbit, face, and neck (soft tissue)
- CT paranasal sinuses and maxillofacial area
- CT soft tissue neck
- MRI temporomandibular joint for suspected inflammatory arthritis, including juvenile idiopathic arthritis (JIA) following initial radiographs

Trauma

Trauma

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- Radiographs required for initial evaluation of suspected mandibular fracture
- CT orbit, sella, or posterior fossa and outer, middle, or inner ear
- MRI orbit, face, and neck (soft tissue)
- CT paranasal sinuses and maxillofacial area
- CT soft tissue neck
- MRI temporomandibular joint for suspected internal derangement when surgery is being considered

Rationale

While CT is the gold standard for maxillofacial trauma, radiographs have moderate to high accuracy for the detection of mandibular fractures with sensitivities up to 92%³ at lower radiation doses. CT is more accurate for nondisplaced fractures and condylar fractures.³ Evidence-based guidelines recommend CT as the initial imaging study for maxillofacial trauma.⁴ MRI is generally reserved as an add-on test following radiography or CT when trauma to the soft tissues of the temporomandibular joint/internal derangement is suspected in a surgical candidate.

Tumor/Soft Tissue Mass

For management of documented malignancy, see Oncologic Imaging guidelines.

Acoustic neuroma

Advanced imaging is considered medically necessary in **ANY** of the following scenarios:

Management

- Known acoustic neuroma
- Symptoms or imaging findings suggestive of recurrence or progression

Surveillance

- Neurofibromatosis type 2
- Following conservative treatment (“watch and wait”) or incomplete resection (including proton beam therapy or stereotactic radiosurgery) annually for 5 years and then every 5 years thereafter
- Following gross total resection: baseline study within the first year after surgery, and follow-up studies at 2 years, 5 years, and 10 years after surgery

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear when MRI cannot be performed

Cholesteatoma

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear

Neck mass (including lymphadenopathy)

ADULT

Advanced imaging is considered medically necessary in **ANY** of the following scenarios:

- When **ANY** of the following features are present:
 - Firm mass greater than 1.5 cm in diameter
 - Persistent for greater than 2 weeks, or increasing in size
 - Fixed or ulcerated mass of any size
 - Associated clinical or lab findings suggestive of malignancy
- Ultrasound or laryngoscopy findings suspicious for malignancy
- To direct management of a mass remaining incompletely characterized following ultrasound or laryngoscopy

Note: For management of a malignant mass, see Oncologic Imaging guidelines.

PEDIATRIC

Advanced imaging is considered medically necessary in **EITHER** of the following scenarios:

- Diagnosis:
 - When incompletely characterized by ultrasound or laryngoscopy
- Management:
 - To direct management of a known benign or benign-appearing mass incompletely characterized on ultrasound or laryngoscopy
 - For management of established lymphadenopathy in **ANY** of the following scenarios:

- Ultrasound findings suggestive of nodal malignancy
- Nondiagnostic ultrasound and failure to resolve following a 6-week course of empiric therapy
- Nondiagnostic ultrasound and **ANY** of the following features:
 - Absence of pain or tenderness
 - Constitutional symptoms
 - Firm/immobile and size greater than 3 cm in diameter
 - Persistent enlargement on exam for longer than 2 weeks
 - Presence of ulceration
 - Supraclavicular or posterior triangle location

Note: Biopsy may be more appropriate than imaging when any of these features are present.

Note: For management of a malignant mass, see Oncologic Imaging guidelines.

IMAGING STUDY

- MRI orbit, face, and neck (soft tissue)
- CT soft tissue neck

Rationale

ADULT NECK MASS

The American Academy of Otolaryngology–Head and Neck Surgery recommends a neck CT or MRI with contrast for patients with a neck mass found to be at increased risk for malignancy⁹; this approach is also endorsed by best practice guidelines.⁵ A variety of factors increase the clinical pretest probability for a malignant neck mass, including age over 40, persistence for greater than 2 weeks, and absence of infectious symptoms.⁶ Additional high-risk features of adenopathy such as supraclavicular location or firmness increase the likelihood of malignancy.

PEDIATRIC NECK MASS

Unlike neck masses in adults, the majority of pediatric neck masses are benign. Ultrasound is usually the first-line imaging modality for pediatric neck masses, especially given the risk of radiation, inaccessibility of MRI and potential need for sedation.⁷ Evidence-based appropriateness criteria from the American College of Radiology recommend ultrasound for initial evaluation of soft tissue masses in the neck.⁸ Advanced imaging is most useful to evaluate the extent of lymphadenopathy and to evaluate nodal locations that are not palpable or accessible to ultrasound (such as the lateral retropharyngeal nodes). Ultrasound is the primary modality for evaluating and following lymph nodes in children.^{9, 10} Sonographic characteristics such as size, loss of fatty hilar morphology, and shape increase the likelihood of malignancy but do not replace biopsy.¹¹ Additional high-risk features of adenopathy such as supraclavicular location or firmness increase the likelihood of malignancy. Advanced imaging may be indicated as an adjuvant to biopsy to look for adenopathy in other locations, particularly in places where ultrasound assessment is limited.

Parathyroid adenoma

Advanced imaging is considered medically necessary in **EITHER** of the following scenarios:

- To identify an adenoma for surgical planning in patients with ANY of the following:
 - Symptomatic hyperparathyroidism
 - Serum calcium > 1 mg/dL above the normal range
 - Primary hyperparathyroidism and imaging showing osteoporosis, fragility fracture, or vertebral compression fracture
 - Hyperparathyroidism diagnosed at age 50 years or younger
 - Clinical or biochemical evidence consistent with parathyroid cancer

- Patient unwilling or unable to comply with observation protocols
- Neurocognitive/neuropsychiatric symptoms due to hyperparathyroidism
- Localization of residual parathyroid tissue in patients with recurrent or persistent disease following parathyroidectomy

IMAGING STUDY

- CT soft tissue neck when ultrasound and parathyroid scintigraphy are nondiagnostic or normal in patients with high clinical suspicion of a parathyroid adenoma
- CT soft tissue neck as an alternative to parathyroid SPECT or SPECT-CT when requested by providers experienced in the treatment of parathyroid adenomas

Rationale

Ultrasound and sestamibi scintigraphy are the most common initial imaging tests used to evaluate suspected parathyroid adenoma and have a diagnostic accuracy of above 80%.¹² Primary hyperparathyroidism (pHPT) guidelines from the American Association of Endocrine Surgeons (AAES) recommend “ultrasound to localize parathyroid disease and to assess for concomitant thyroid disease (strong recommendation based on low quality evidence)”. They further recommend that “an experienced clinician should help determine which type of imaging to use based on knowledge of their regions imaging capabilities (strong recommendation based on moderate quality evidence)”.¹³

The AAES primary hyperparathyroidism guideline¹³ also covers management of primary hyperparathyroidism. They state that parathyroidectomy is indicated and make strong recommendations for surgery in patients with symptomatic pHPT, pHPT and osteoporosis, fragility fracture, or vertebral compression fracture on imaging, and clinical or biochemical evidence consistent with parathyroid cancer (based on high quality evidence; a strong recommendation for surgery in patients with pHPT diagnosed at age 50 or younger (based on moderate quality evidence); and strong recommendations for surgery in patients with serum calcium > 1 mg/dL above the normal range, patients unwilling or unable to comply with observation protocols such as annual biochemical evaluation and periodic bone density assessment, and patients with neurocognitive or neuropsychiatric symptoms due to pHPT (based on low quality evidence). They make a weak recommendation that surgery is indicated for patients with objective evidence of renal involvement, based on low quality evidence; and make weak recommendations regarding offering or considering surgery for patients with cardiovascular disease who might benefit from mitigation of cardiovascular sequelae (low quality evidence) and patients with non-traditional symptoms such as gastroesophageal reflux, muscle weakness, abnormal sleep patterns, and fibromyalgia (moderate quality evidence). They further state, “In patients who meet none of these indications for surgical intervention, refuse surgery, or are considered prohibitively high risk, medical intervention aimed at mitigating specific sequelae should be used”.¹³

Thyroid nodule or thyromegaly (goiter)

Advanced imaging is considered medically necessary in **EITHER** of the following scenarios:

- Diagnosis
 - To confirm the diagnosis of retrosternal goiter when suspected by ultrasound
- Management in **EITHER** of the following scenarios:
 - Mass effect on the upper airway or esophagus
 - Preoperative evaluation

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Rationale

Multiple high-quality evidence-based guidelines recommend ultrasound in the initial characterization of thyroid nodules.^{14, 15} Ultrasound has good spatial resolution, is widely available, and non-ionizing. Nodule characteristics on ultrasound help to establish the pretest probability of malignancy and determine the need for biopsy.

CT and MRI have a limited role in the diagnosis of thyroid nodules but provide a wider field of view and better anatomic delineation of retrosternal goiter and other large thyroid masses as needed for preoperative planning. CT and MRI are also useful in staging biopsy-proven thyroid carcinoma (see Oncologic Imaging) (recommendation based on moderate quality evidence).^{14, 15}

Tumor – not otherwise specified

See *Oncologic Imaging guidelines for management of established malignancy*

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear
- MRI orbit, face, and neck (soft tissue)
- CT paranasal sinuses and maxillofacial area
- CT soft tissue neck

Nasal Indications

Advanced imaging is considered medically necessary for evaluation of **ANY** of the following indications:

Anosmia unexplained by sinusitis

Foreign body

Mucocele of the paranasal sinus

Nasal airway obstruction refractory to medical therapy

Nasal or sinus polyposis

Recurrent epistaxis

IMAGING STUDY

- CT paranasal sinuses and maxillofacial area
- MRI orbit, face, and neck (soft tissue) for anosmia, recurrent epistaxis, or nasal airway obstruction or polyposis refractory to medical therapy

Orbital Indications

Advanced imaging is considered medically necessary for evaluation of **ANY** of the following conditions:

Absence of red reflex (pediatric only)

Dysconjugate gaze

Exophthalmos or proptosis

Extraocular muscle weakness

Nystagmus

Optic neuritis

Orbital pseudotumor

Papilledema

Strabismus

Thyroid ophthalmopathy

IMAGING STUDY

- MRI orbit, face, and neck (soft tissue)
- CT orbit, sella, or posterior fossa and outer, middle, or inner ear

Temporomandibular Joint Pathology

Temporomandibular joint dysfunction

Advanced imaging is considered medically necessary for diagnosis or management when **BOTH** of the following requirements are met:

- Mechanical symptoms (such as locking, popping, or clicking) which have not improved with a six-week course of conservative treatment, including nonsteroidal anti-inflammatory drugs or acetaminophen, a short-term trial of soft diet and proper chewing techniques, and an oral appliance (such as a bite block)
- Surgical intervention is being considered

IMAGING STUDY

- CT paranasal sinuses and maxillofacial area preferred for intraarticular loose bodies and temporomandibular joint osteoarthritis
- MRI temporomandibular joint preferred for evaluation of internal derangement or disc displacement

Rationale

The diagnosis of temporomandibular disease is primarily clinical with history and physical exam features having moderate (~5) positive likelihood ratios and moderate-to-high (~.3) negative likelihood ratios.^{16,17} While radiographs are less accurate than CT or MRI, they are often a useful initial test to exclude other etiologies for temporomandibular joint pain such as fracture and have high (greater than 90%) specificity for osteoarthritis.¹⁸

Existing evidence-based guidelines strongly recommend that, unless there are specific and justifiable indications to the contrary, treatment of patients with temporomandibular disease (TMD) should initially be based on the use of conservative, reversible, and evidence-based therapeutic modalities. While no specific therapies have been proven to be universally effective, many of the conservative modalities have proven to be at least as effective in providing symptomatic relief as most forms of invasive treatment. Because those modalities do not produce irreversible changes, they present much less risk of producing harm. Professional treatment should be augmented with a home care program, in which patients are taught about their disorder and how to manage their symptoms. Due to high rates of asymptomatic disc pathology on MRI, imaging should generally be reserved until after initial attempts at nonoperative management have failed.

The evidence-based Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) includes criteria for the assessment of Axis I (physical) diagnoses for the most common temporomandibular disorders. Among the mechanical signs and symptoms

suggestive of disc displacement are temporomandibular joint clicking, popping, or snapping noises which may be associated with opening or closing of the mouth or with lateral or protrusive movements. Temporomandibular joint locking, often with limited opening, may also occur. These criteria may be used for screening purposes but definitive diagnoses require advanced imaging. When disc displacement is suspected, MRI has the highest accuracy; however, CT provides superior osseous detail and a higher diagnostic accuracy for osteoarthritis and loose bodies.¹⁷

Miscellaneous Conditions

Cerebrospinal fluid (CSF) leak of the skull base

Imaging is considered medically necessary for diagnosis and management when CSF leak is suspected and **ANY** of the following are present:

- CSF rhinorrhea when fluid is positive for beta-2 transferrin
- History of skull base trauma or surgery
- Known cerebrospinal fluid (CSF) leak with new or worsening symptoms

IMAGING STUDY

- CT paranasal sinuses and maxillofacial area (CT cisternography)

Foreign body evaluation

Advanced imaging is considered medically necessary when radiographs are nondiagnostic.

IMAGING STUDY

- CT orbit, sella, or posterior fossa for foreign body in ear canal or orbit
- CT soft tissue neck for foreign body in aerodigestive tract

Laryngeal edema

Advanced imaging is considered medically necessary for diagnosis and management (including perioperative evaluation).

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Osseous lesions

Include fibrous dysplasia, Paget's disease, and otosclerosis.

Advanced imaging is considered medically necessary for diagnosis and management (including perioperative evaluation) of lesions in the temporal bones, sella turcica, orbit, or posterior fossa.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear

Osteonecrosis of the jaw

Advanced imaging is considered medically necessary when radiographs or Panorex have been performed and further imaging is needed to direct management.

IMAGING STUDY

- MRI orbit, face, and neck (soft tissue)
- CT paranasal sinuses and maxillofacial area
- CT soft tissue neck

Salivary gland ductal calculi

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT soft tissue neck

Torticollis (Pediatric only)

- Congenital muscular torticollis in infants age 8 months or younger
 - When ultrasound of the neck and cervical spine radiographs are nondiagnostic, and there is no improvement following 4 weeks of conservative treatment
- Childhood (acquired) torticollis
 - Evaluation for secondary causes (such as infection, neoplasm, trauma) when clinically indicated

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Tracheal stenosis or upper airway obstruction

Advanced imaging is considered medically necessary for diagnosis and management (including perioperative evaluation).

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Perioperative imaging

Cochlear implant

Advanced imaging is considered medically necessary for perioperative evaluation related to cochlear implant placement.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear

Perioperative imaging, not otherwise specified

Includes only indications not listed elsewhere in this guideline document

Advanced imaging is considered medically necessary in the following scenarios:

- For preoperative planning related to orthognathic surgery
- For preoperative planning related to facial feminization surgery

IMAGING STUDY

- CT paranasal sinus and maxillofacial area
- CT soft tissue neck

Signs and Symptoms

Dizziness or vertigo

Also see Brain Imaging guidelines.

Advanced imaging is considered medically necessary for dizziness associated with **ANY** of the following:

- Abnormal neurologic exam, audiogram or vestibular function testing suggestive of an intracranial or vestibulocochlear mass lesion
- Unilateral hearing loss or tinnitus
- Tullio's phenomenon (noise-induced dizziness)

Note: Vertigo or dizziness that is clearly related to positional change does not require advanced imaging.

IMAGING STUDY

- CT orbit/sella/posterior fossa (CT temporal bone)

Rationale

For isolated vertigo without additional neurological signs or symptoms, the diagnostic yield of imaging for a structural cause is low. The diagnostic yield for imaging of benign paroxysmal positional vertigo on clinical exam is also low and routine imaging is not warranted. The American Academy of Otolaryngology–Head and Neck Surgery recommends that initial imaging should not be performed for patients who meet the diagnostic criteria for benign paroxysmal positional vertigo and that patients should be reassessed after 1 month of observation or treatment for the resolution or persistence of symptoms.¹⁹ Additional evidence-based guidelines recommend against the use of CT to differentiate between peripheral and central causes in patients presenting to the emergency department with vertigo.²⁰

When central vertigo is suspected, prompt use of advanced imaging is generally appropriate to rule out acute potentially life-threatening causes. In two single-center retrospective studies, MRI changed management in 16%-22% of patients with central vertigo.^{21,22} The American College of Radiology recommends MRI brain with and without contrast for patients with central vertigo.^{23, 24} CT brain may also be performed although MRI is more sensitive than CT for detection of posterior fossa strokes.²²

Hearing loss

Also see Brain Imaging guidelines.

ADULT

Advanced imaging is considered medically necessary for detecting a structural cause of hearing loss in **EITHER** of the following scenarios:

- Conductive hearing loss
- Sensorineural hearing loss characterized by **ANY** of the following features:
 - Idiopathic sudden onset hearing loss
 - Gradual onset of unilateral or asymmetric hearing loss demonstrated by audiometric testing (15 dB or greater at 2 consecutive frequencies between 0.5 and 8 kHz)
 - Hearing loss associated with at least 1 neurologic sign or symptom known to increase the pretest probability of a retrocochlear lesion

PEDIATRIC

Advanced imaging is considered medically necessary to evaluate for a structural cause of sensorineural, conductive, or mixed hearing loss.

IMAGING STUDY

- MRI brain for evaluation of sensorineural hearing loss
- CT orbit/sella/posterior fossa for evaluation of sensorineural hearing loss in pediatric patients; or in adult patients when MRI cannot be performed or is nondiagnostic
- CT orbit/sella/posterior fossa for evaluation of conductive hearing loss
- MRI brain or CT orbit/sella/posterior fossa for evaluation of mixed hearing loss, based on clinical scenario

Rationale

The primary purpose of imaging sensorineural hearing loss is to detect retrocochlear pathology, typically a tumor of the vestibular nerve (cranial nerve 8) or cerebellopontine angle (CPA). More than 85% of these tumors are acoustic neuromas (also called vestibular schwannomas). However, vestibular schwannomas are rare, with an overall prevalence of 1 per 100,000, and they are found only in 2% to 8% of patients with autoimmune sensorineural hearing loss.

A 15 dB or greater difference at 2 consecutive frequencies has a sensitivity of 97% and a specificity of 49% for the diagnosis of vestibular schwannoma. For optimum specificity (~67%) with high sensitivity (~90%) the American Academy of Otolaryngology–Head and Neck Surgery protocol is recommended, which proposes ≥ 15 dB between ears, averaging 0.5 to 3 kHz.²⁵

MRI of the head and the internal auditory canal, commonly known as an IAC protocol, is most effective in screening for CPA tumors. Clinicians should not order CT of the head/brain in the initial evaluation of a patient with presumptive sudden sensorineural hearing loss.²⁶

Hoarseness, dysphonia, and vocal cord weakness/paralysis – primary voice complaint

Also see Chest Imaging guidelines.

Advanced imaging is considered medically necessary in **EITHER** of the following scenarios:

- Following laryngoscopy, when findings suggest recurrent laryngeal nerve dysfunction or identify a suspicious lesion
- Evaluation of symptoms persisting longer than 1 month which are unexplained by laryngoscopy

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Rationale

Most hoarseness is self-limited or caused by a pathology that can be identified by laryngoscopy.

Clinicians should visualize the patient's larynx, or refer the patient to a clinician who can visualize the larynx, when hoarseness fails to resolve by a maximum of 3 months after onset, or irrespective of duration if a serious underlying cause is suspected.²⁷ Benign lesions of the vocal cords such as cysts, nodules, polyps, and gastroesophageal reflux are frequently diagnosed and managed with laryngoscopy alone. Accuracy of history and physical exam in hoarseness is low (5%) and laryngoscopy increases the accuracy of diagnosis by approximately 68%.

Hoarseness is common in young children (15%-24%) and usually due to benign lesions that can be seen on laryngoscopy. Vocal cord nodules are the most common type of these benign lesions, accounting for approximately 77% of cases.²⁶ The American Academy of Otolaryngology–Head and Neck Surgery Foundation states that advanced imaging (CT or MRI) should not be performed in patients with a primary complaint of hoarseness prior to examining the larynx.

Horner's syndrome

Also see Brain Imaging and Chest Imaging guidelines.

Advanced imaging is considered medically necessary for diagnosis and management.

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Rationale

Horner's syndrome is a condition that results from disruption of the sympathetic nervous supply to the eye and is characterized by the triad of miosis, ptosis, and anhidrosis.²⁸

Evaluation of Horner's syndrome begins with a complete neurological and ophthalmological examination which may reveal an etiology for the condition such as surgical trauma. Additional neurological features such as additional cranial nerve deficits may localize the pathology to the brain in which case a sequential diagnostic testing strategy starting with brain MRI may be possible. In nonlocalized cases, the entire course of the oculosympathetic pathway may need to be visualized including an MRI of the brain and an MRI, CT, or MRA/CTA of the neck if there is concern for carotid dissection as a cause. The yield of diagnostic imaging in isolated Horner's syndrome is approximately 15%-20%,^{29, 30} and the most common etiologies identified by neuroimaging are carotid artery dissections and cavernous sinus masses.

For pediatric patients, one study found that neuroimaging (MRI head, neck, and chest if indicated) identified a cause in up to 33% of cases.³¹ Unlike in adults, neoplasms such as neuroblastoma and Ewing sarcoma are the most common etiologies for Horner's syndrome identified by neuroimaging in pediatric patients.

Localized facial pain (including trigeminal neuralgia)

Advanced imaging is considered medically necessary for evaluation when localized facial pain is persistent and unexplained.

IMAGING STUDY

- CT orbit, sella, or posterior fossa and outer, middle, or inner ear
- MRI orbit, face, and neck (soft tissue)

Stridor

Advanced imaging is considered medically necessary in **EITHER** of the following scenarios:

- Evaluation of acute stridor
- Evaluation of subacute or chronic stridor, following nondiagnostic radiograph and laryngoscopy

IMAGING STUDY

- CT soft tissue neck
- MRI orbit, face, and neck (soft tissue)

Tinnitus

Also see Brain Imaging guidelines.

Advanced imaging is considered medically necessary in **EITHER** of the following scenarios:

- Evaluation for vascular pathology when tinnitus is pulsatile in quality
- Evaluation for retrocochlear pathology when at least **ONE** of the following features is present:
 - Associated neurologic findings
 - Unilateral or asymmetric symptoms

IMAGING STUDY

- MRI brain
- CT orbit, sella, or posterior fossa and outer, middle, or inner ear when MRI cannot be performed or is nondiagnostic

Rationale

In the setting of pulsatile tinnitus, evidence-based guidelines support the use of MRI or MR angiography for initial evaluation. In the absence of trauma, hearing loss, or neurologic deficits, MRI is appropriate in the setting of unilateral non-pulsatile tinnitus; however, advanced imaging is generally not indicated for bilateral nonpulsatile tinnitus in the absence of neurologic deficit, trauma, or hearing loss.³³

Visual disturbance or visual field defect

Also see Brain Imaging guidelines.

Advanced imaging is considered medically necessary to evaluate for orbital or optic nerve pathology when suggested by the vision testing or fundoscopic exam.

IMAGING STUDY

- MRI orbit, face, and neck (soft tissue)
- CT orbit, sella, or posterior fossa and outer, middle, or inner ear

Rationale

Advanced imaging is usually not appropriate in patients whose visual disturbance is explained by the ophthalmologic exam.³⁴ MRI of the orbits, typically with and without contrast, is appropriate to further characterize abnormalities on the ophthalmologic exam.³⁴

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Codes

The following code list is not meant to be all-inclusive. Authorization requirements will vary by health plan. Please consult the applicable health plan for guidance on specific procedure codes.

Specific CPT codes for services should be used when available. Nonspecific or not otherwise classified codes may be subject to additional documentation requirements and review.

CPT/HCPCS

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70336	MRI of the temporomandibular joint(s)
70450	CT head/brain, without contrast
70460	CT head/brain, with contrast

70470	CT head/brain, without contrast, followed by re-imaging with contrast
70480	CT of orbit, sella, or posterior fossa or outer, middle or inner ear, without contrast
70481	CT of orbit, sella, or posterior fossa or outer, middle or inner ear, with contrast
70482	CT of orbit, sella, or posterior fossa or outer, middle or inner ear, without contrast, followed by re-imaging with contrast
70486	CT of maxillofacial area, without contrast
70487	CT of maxillofacial area, with contrast
70488	CT of maxillofacial area, without contrast, followed by re-imaging with contrast
70490	CT, soft tissue neck, without contrast
70491	CT, soft tissue neck, with contrast
70492	CT, soft tissue neck, without contrast, followed by re-imaging with contrast
70540	MRI orbit, face and neck, without contrast
70542	MRI orbit, face and neck, with contrast
70543	MRI orbit, face and neck, without contrast, followed by re-imaging with contrast
70551	MRI brain (including brain stem), without contrast
70552	MRI brain (including brain stem), with contrast
70553	MRI brain (including brain stem), without contrast, followed by re-imaging with contrast

ICD-10 Diagnosis

Refer to the ICD-10 CM manual

History

Status	Review Date	Effective Date	Action
Revised	07/17/2025	04/04/2026	Independent Multispecialty Physician Panel (IMPP) review. Revised indications: Sinusitis/rhinosinusitis, Neck mass (including lymphadenopathy), and Dizziness or vertigo.
Reaffirmed	07/16/2024	Unchanged	IMPP review. Guidelines reaffirmed.
Revised	07/18/2023	04/14/2024* *Not for LA Medicaid	IMPP review. Revised indications: Acoustic neuroma and Localized facial pain. Added required language to General Clinical Guideline per new Medicare regulations.
Revised	05/09/2022	04/09/2023 for commercial, Medicare, and Medicaid except LA; 06/18/2023 for LA Medicaid	IMPP review. Revised indications for Neck mass and Perioperative imaging.
Revised	05/26/2021	03/13/2022	IMPP review. Revised indications for Sinusitis, Parathyroid adenoma, Temporomandibular joint dysfunction. Added indications for Acoustic neuroma and Perioperative imaging.
Revised	05/26/2021	11/07/2021	IMPP review. Revised indication for Parathyroid adenoma.
Revised	02/03/2020	03/14/2021	IMPP review. Revised indications include Sinusitis, TMJ dysfunction, CSF leak, Hearing loss,

Status	Review Date	Effective Date	Action
			Hoarseness/dysphonia/vocal cord weakness, and Tinnitus.
Revised	11/28/2018	06/29/2019	IMPP review. Revised indications: Sinusitis, Infectious disease, Inflammatory conditions, Trauma, Neck mass, Parathyroid adenoma, TMJ dysfunction, CSF leak of the skull base, Dizziness or vertigo, and Hearing loss.
Restructured	09/12/2018	01/01/2019	IMPP review. Advanced Imaging guidelines redesigned and reorganized to a condition-based structure. Incorporated AIM guidelines for pediatric imaging.
Revised	07/11/2018	03/09/2019	IMPP review. Renamed the Administrative Guidelines to "General Clinical Guideline." Retitled Pretest Requirements to "Clinical Appropriateness Framework" to summarize the components of a decision to pursue diagnostic testing. Revised to expand applicability beyond diagnostic imaging, retitled Ordering of Multiple Studies to "Ordering of Multiple Diagnostic or Therapeutic Interventions" and replaced imaging-specific terms with "diagnostic or therapeutic intervention." Repeated Imaging split into two subsections, "repeat diagnostic testing" and "repeat therapeutic intervention."
Reaffirmed	08/15/2017	03/12/2018	Annual review.
Revised	11/01/2016	02/20/2017	IMPP review. Revised indications for brain imaging. Restructured content and added clarification language.
Created	-	03/30/2005	Original effective date.