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Approval and implementation dates for specific health plans may vary. Please consult the applicable health plan for more details.

Clinical Appropriateness Guidelines

Advanced Imaging

Appropriate Use Criteria: Low-field MRI

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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. As used by Carelon, the Guidelines establish objective and evidence-based criteria for medical necessity determinations where possible. In the process, multiple functions are accomplished:

- To establish criteria for when services are medically necessary (i.e., in general, shown to be effective in improving health outcomes and considered the most appropriate level of service)
- 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 advocate for 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 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. Relevant citations are included in the References section attached to each Guideline. Carelon reviews all of its Guidelines at least annually.

Carelon makes its Guidelines publicly available on its website twenty-four hours a day, seven days a week. Copies of the Carelon Clinical Appropriateness Guidelines are also available upon oral or written request. 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.

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. 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 should outweigh any potential harms that may result (net benefit).
- Current literature and/or standards of medical practice should support that the recommended intervention offers the greatest net benefit among competing alternatives.
- Based on the clinical evaluation, current literature, and standards of medical practice, there exists a reasonable likelihood that the intervention will change management and/or lead to an improved outcome for the patient.

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 supersede the requirements set forth above. During the peer-to-peer conversation, factors such as patient acuity and setting of service may also be taken into account.

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.

Low-field MRI

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

S8042	Magnetic resonance imaging (mri), low-field

ICD-10 Diagnosis

Refer to the ICD-10 CM manual

General Information

Scope

- These guidelines address advanced imaging with low-field MRI 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

- **Low-field MRI** is generally considered to include scanners with a magnetic field strength of 0.5 Tesla (T) or less. Intermediate-field MRI generally includes scanners of greater than 0.5T and less than 1.5T, and high-field MRI includes scanners of 1.5T or greater. Most imaging facilities offer conventional MRI using scanners with a 1.5T magnet, and 3T scanners are widely available. Advantages of high-field MRI include improved signal-to-noise ratio, improved contrast-to-noise ratio, and improved spatial and temporal resolution compared to lower-field scanners. Advantages of lower-field MRI include easier installation, lower maintenance cost, and greater patient comfort.
- **Open MRI** is an MRI scanner in which the magnets are located above and below the patient, rather than in a cylindrical bore as is the case with conventional MRI scanners. The majority of open MRI scanners are 0.2 to 0.3T, though higher-field scanners of up to 1.2T are available. Advantages to open MRI include the ability to image patients who are unable to tolerate conventional MRI due to claustrophobia, as well as larger-sized patients. Disadvantages of open MRI are related to the lower magnetic field strength and include lower signal-to-noise ration and poorer spatial and temporal resolution. These disadvantages are less significant in open scanners of higher field strength, but those scanners are not widely available. If an open MRI unit of intermediate or high field strength is available, this is generally preferred over a lower-field unit.
- **Positional MRI** involves obtaining MRI images with the patient in a position other than supine; primarily, this refers to images obtained with the patient seated or standing upright. Often, these studies require the use of an open MRI scanner of low field strength.

- **Contraindications to intermediate- or high-field MRI** for which low-field MRI is possible include claustrophobia and patient size. A standard MRI has a bore opening of 60 cm, and some wide-bore MRI units have an opening of 70 cm diameter. For patients in whom the bore size is a limiting factor, open MRI may be appropriate.

Definitions

Signal-to-noise ratio (SNR): Comparison of the signal strength within a volume of tissue being imaged to the signal strength within a background region.

Contrast-to-noise ratio (CNR): The difference in SNR between two tissue types, such as muscle and fluid.

Spatial resolution: Refers to the sharpness of the image; smaller voxel size equals increased spatial resolution.

Temporal resolution: Refers to the length of time between one image and the next in a sequence.

Susceptibility: The degree to which a particular tissue or object is magnetized by a magnetic pulse. Materials with very high susceptibility may cause susceptibility artifact by distorting the magnetic field in the adjacent tissues.

Clinical Indications

The following section includes indications for which the use of low-field MRI 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.

The use of low-field MRI is considered medically necessary when criteria for MRI are met and intermediate- or high-field MRI cannot be performed.

Imaging Study

- Low-field MRI

History

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Created	03/25/2019	01/01/2021	Independent Multispecialty Physician Panel (IMPP) review. Original effective date.