Cohere Medicare Advantage Policy - Magnetic Resonance Imaging (MRI), Bone Marrow

Clinical Guidelines for Medical Necessity Review

Version: 1
Effective Date: October 3, 2024

Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Diagnostic Imaging
Guideline Name: Cohere Medicare Advantage Policy - Magnetic Resonance Imaging (MRI), Bone Marrow

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Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Bone Marrow

Benefit Category

Diagnostic Services in Outpatient Hospital
Diagnostic Tests (other)

Please Note: This may not be an exhaustive list of all applicable Medicare benefit categories for this item or service.[1]

Related CMS Documents

Please refer to the CMS Medicare Coverage Database for the most current applicable CMS National Coverage.[1]

- National Coverage Determination (NCD). Magnetic resonance imaging (MRI) (220.2)

Recommended Clinical Approach

Magnetic resonance imaging (MRI) of the bone marrow is recommended in patients with known or suspected multiple myeloma, plasmacytoma, and Gaucher Disease.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of MRI of the bone marrow. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals reduces the risks associated with unnecessary procedures, such as complications from surgery, infections, and prolonged recovery times.

The potential clinical harms of using these criteria may include:

- There is a risk of malfunction of implanted medical devices (e.g., implanted pacemakers, cochlear implants).

- A potential exists for allergic reactions to contrast material, if used in the study. The MRI department staff will monitor the patient for an allergic reaction and treat as recommended by a physician.[2]
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.[2]
- If sedation is used for the study (for anxiety or claustrophobia), there is a risk of over-sedation. The patient will be monitored during the procedure to reduce this risk.
- There is uncertain risk for MR imaging in pregnant patients. The decision to image in a pregnant patient should be made on an individual basis in consultation with the patient's obstetric provider.[3]
- Increased healthcare costs and complications from the inappropriate use of additional interventions.[4]

The clinical benefits of using these criteria include:

- Expeditious and Encompassing: MRI of the bone marrow is the most sensitive method - referred to as "the gold standard" - in the detection of malignant bone marrow involvement.[5]
- Noninvasive: As an imaging modality, MRI is relatively noninvasive. It is widely accepted that noninvasive procedures are less costly, associated with fewer complications, and preferred by both patients and providers.[6]
- Enhanced overall patient satisfaction and healthcare experience.

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

➔ **Magnetic resonance imaging (MRI), bone marrow** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ Multiple myeloma, including **ANY** of the following[7-8]:
  - Monoclonal gammopathy of uncertain significance (MGUS) (low dose CT, whole body is preferred); **OR**
  - Solitary bone plasmacytoma[9]; **OR**
  - Systemic multiple myeloma, suspected or confirmed[10]; **OR**
  - Smoldering multiple myeloma, suspected or confirmed[10]; **OR**
- ◆ Diagnosis and assessment of treatment response of marrow involvement in storage diseases (e.g., Gaucher Disease); **OR**
- ◆ Repeat imaging (defined as repeat request following recent imaging of the same anatomic region with the same modality), in the absence of established guidelines, will be considered reasonable and necessary if **ANY** of the following is **TRUE**:
  - New or worsening symptoms, such that repeat imaging would influence treatment; **OR**
  - One-time clarifying follow-up of a prior indeterminate finding; **OR**
  - In the absence of change in symptoms, there is an established need for monitoring which would influence management.

Non-Indications

➔ **Magnetic resonance imaging (MRI), bone marrow** may not be considered appropriate if **ANY** of the following is **TRUE**:

- If contrast is used, history of anaphylactic allergic reaction to gadolinium contrast media with detailed guidelines for use in patients with renal insufficiency; **OR**
- The patient has metallic clips on vascular aneurysms; **OR**
- Incompatible implantable devices (e.g., pacemakers, defibrillators, cardiac valves); **OR**
- Metallic foreign body in orbits/other critical area(s) or within the field of view and obscuring area of concern.

*NOTE: MRI in patients with claustrophobia should be requested at the discretion of the ordering provider.
**NOTE: MRI in pregnant patients should be requested at the discretion of the ordering provider and obstetric care provider.

Level of Care Criteria

Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
77084	Magnetic resonance imaging (MRI) (e.g., proton); bone marrow blood supply

Medical Evidence

Karampinos et al. (2018) reviewed quantitative magnetic resonance imaging (MRI) and spectroscopy of bone marrow. Due to its exceptional soft-tissue contrast capability, MRI is the preferred imaging method for tracking certain bone marrow alterations. MRI of the bone marrow is routinely utilized to diagnose and visualize marrow lesions and monitor response to treatment (e.g., plasmacytoma, multiple myeloma). Innovative quantitative MRI techniques and magnetic resonance spectroscopy (MRS) can accurately measure changes in bone marrow composition, including water-fat distribution, cellularity, and perfusion across various pathologies.[11]

Shah et al. (2014) conducted a retrospective cohort study on the evaluation of incidental abnormal bone marrow signals on MRI. Among 49,678 MRI scans conducted, 110 patients over 18 met the inclusion criteria. Of note, 22% underwent additional evaluation, primarily consisting of complete blood counts, serum protein electrophoresis, or bone scans. Over a median follow-up period of 41 months, 6% of patients received diagnoses of malignancies, including multiple myeloma, non-Hodgkin's lymphoma, metastatic non-small cell lung cancer, and metastatic adenocarcinoma. Furthermore, one patient who had not undergone evaluation was diagnosed with breast cancer 24 months post-MRI. Abnormal or heterogeneous bone marrow signals on MRI should not be dismissed, as they often warrant further investigation.[12]

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Clinical Guideline Revision History/Information

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