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

Clinical Policy for Medical Necessity Review

Version: 2
Cohere Health UMC Approval Date: October 2, 2025
Last Annual Review: October 2, 2025
Revision: Not Applicable
Next Annual Review: October 2, 2026

Important Notices

Notices & Disclaimers:

GUIDELINES ARE SOLELY FOR COHERE'S USE IN PERFORMING MEDICAL NECESSITY REVIEWS AND ARE NOT INTENDED TO INFORM OR ALTER CLINICAL DECISION-MAKING OF END USERS.

Cohere Health, Inc. ("**Cohere**") has published these clinical guidelines to determine the medical necessity of services (the "**Guidelines**") for informational purposes only, and solely for use by Cohere's authorized "**End Users**". These Guidelines (and any attachments or linked third-party content) are not intended to be a substitute for medical advice, diagnosis, or treatment directed by an appropriately licensed healthcare professional. These Guidelines are not in any way intended to support clinical decision-making of any kind; their sole purpose and intended use is to summarize certain criteria Cohere may use when reviewing the medical necessity of any service requests submitted to Cohere by End Users. Always seek the advice of a qualified healthcare professional regarding any medical questions, treatment decisions, or other clinical guidance. The Guidelines, including any attachments or linked content, are subject to change at any time without notice. This policy may be superseded by existing and applicable Centers for Medicare & Medicaid Services (CMS) statutes.

Other Notices:

Policy Information:

Specialty Area: Diagnostic Imaging
Policy Name: Cohere Medicare Advantage Policy - Magnetic Resonance Imaging (MRI), Bone Marrow
Type: [**X**] Adult (18+ yo) | [**X**] Pediatric (0-17 yo)

Table of Contents

Medical Necessity Criteria

Service: Magnetic Resonance Imaging (MRI), Bone Marrow

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)

Description

Magnetic resonance imaging (MRI) of the bone marrow is a noninvasive diagnostic tool that provides insight into the health of the components of bone marrow. It allows for the early detection of marrow infiltration and can be used as a prognostic tool as part of ongoing surveillance. MRI offers benefits over computed tomography (CT), including greater contrast resolution and the lack of radiation exposure.[2,3]

Medical Necessity Criteria

Indications

Magnetic resonance imaging (MRI), bone marrow is considered appropriate if **ANY** of the following is **TRUE**[2-9]:

- Multiple myeloma, including **ANY** of the following[2,3]:
  - Monoclonal gammopathy of uncertain significance (MGUS); **OR**
  - Solitary bone plasmacytoma[4]; **OR**
  - Systemic multiple myeloma, suspected or confirmed[5]; **OR**
  - Smoldering multiple myeloma, suspected or confirmed[5]; **OR**
- Diagnosis or assessment of treatment response of marrow involvement diseases (e.g., chronic recurrent multifocal osteomyelitis, Gaucher disease); **OR**
- Repeat imaging (defined as a repeat request following recent imaging of the same anatomic region with the same or similar modality) will be

considered reasonable and necessary if **ALL** of the following are **TRUE**:

- There are no established guidelines; **AND**
- **ANY** of the following:
  - There are new or worsening symptoms not addressed in the guidelines, such that repeat imaging would influence treatment; **OR**
  - There is need for a 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**:

- The patient has undergone advanced imaging of the same body part within 3 months without undergoing treatment or developing new or worsening symptoms.[10]

*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

Disclaimer: S Codes are non-covered per CMS guidelines due to their experimental or investigational nature.

Evaluation of Clinical Harms and Benefits

Clinical determinations for Medicare Advantage beneficiaries are made in accordance with 42 CFR 422.101 guidance outlining CMS's required approach to decision hierarchy in the setting of NCDs/LCDs identified as being "not fully established". When clinical coverage criteria are "not fully established" Medicare Advantage organizations are instructed to create publicly accessible clinical coverage criteria based on widely-accepted clinical guidelines and/or scientific studies backed by a robust clinical evidence base. Clinical coverage criteria provided by Cohere Health in this manner include coverage rationale and risk/benefit analysis.

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.[11]
- Use of gadolinium-based contrast is not recommended during pregnancy or in patients with acute or chronic kidney injury or disease.[11]
- 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 a risk associated with 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.[12]
- Increased healthcare costs and complications from the inappropriate use of additional interventions.[13]

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.[6]
- 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.[14]
- Enhanced overall patient satisfaction and healthcare experience.

Medical Evidence

A systematic review, conducted by Slot et al. (2021), examined the value of bone marrow imaging in diagnosis, prognostication, and follow-up monitoring of myeloproliferative neoplasms. The review included 55 peer-reviewed articles written in English. While publication dates and population sizes were not considered as part of the exclusion criteria, case reports were omitted from the analysis. The authors found MRI to be a promising imaging technique for the evaluation of bone marrow content and cellularity in myelofibrosis. Slot et al.'s review of the literature also suggests that MRI may be useful in the estimation of bone marrow cellularity in essential thrombocythemia and polycythemia vera.[15]

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.[16]

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 after the MRI. Abnormal or heterogeneous bone marrow signals on MRI should not be dismissed, as they often warrant further investigation.[17]

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Policy Revision History/Information

Original Date: October 3, 2024		
Review History		
Version 2	10/02/2025	Annual review Rearranged bullets for improved usability and organization. Updated non-indication and repeat imaging language. Expanded the Medical Evidence section. Added citations #1-7,15