Cohere Medicare Advantage Policy - Kyphectomy

Clinical Guidelines for Medical Necessity Review

Version: 2
Effective Date: June 10, 2024

Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System
Guideline Name: Cohere Medicare Advantage Policy - Kyphectomy

Date of last literature review: 6/10/2024
Document last updated: 6/10/2024
Type: [**X**] Adult (18+ yo) | [_] Pediatric (0-17yo)

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Service: Kyphectomy

Benefit Category

Not applicable.

Recommended Clinical Approach

Kyphectomy is effective for the correction of kyphosis. The three types of kyphosis include postural, Scheuermann's, and congenital. Nearly 50% of patients have a complication, notably skin and wound breakdown. Patients with myelomeningocele have an increased risk of complications compared to patients with idiopathic scoliosis. Over 40% of patients experience failure of fusion; infection rates are also over 40%.[1]

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 kyphectomy procedures. 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, adverse reactions, and infection.

The potential clinical harms of using these criteria may include:

- Inadequate management of kyphosis and related deformities due to inappropriate denials. If surgery is not considered when the kyphotic deformity is severe and refractory to conservative management complications can occur including neurologic deficits and cardiopulmonary compromise. Delaying surgery can also result in patient dissatisfaction with their appearance.
- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, urinary tract infection, pneumonia, DVT, myocardial infarction, stroke, unplanned intubation, sepsis, anesthetic risk, death and need for repeat or additional procedures due to pseudoarthrosis, ongoing deformity or pain. In addition, adults undergoing a kyphectomy for correction of

adult spinal deformity has an all-cause mortality of 1% within one year of surgery, according to Zuckernman et al.[9] They identified four independent risk factors associated with mortality: increased age, ASA score=4.32 or great, cancer history and unintentional weight loss. Therefore, patients need to be screened and optimized for this elective surgery. Using criteria within guidelines can help select optimal patients. Scheer et al report that Patients with a Type D deformity were least likely to report improved leg pain and were more likely to experience worsening of pain.[10] Therefore careful surgical selection is important for excellent outcomes.

- Increased healthcare costs and complications from the inappropriate use of emergency services and additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to kyphectomy. Scheuermann's Kyphosis is the most common cause of structural spine deformities. Diagnosis is made using Sorenson criteria with a thoracolumbar kyphosis > 30 degrees with surgical indications when the kyphosis is greater than 70 degrees. Appropriately timed surgery can improve the deformity as well as pulmonary function. Scheer et al reports that patients that had surgery for adult spinal deformity are 6 times more likely to have an improvement in back pain and 3 times more likely to have an improvement in leg pain compared to patients who did not have surgery.[10]
- Alvardo et al discuss the cost effectiveness of adult spinal deformity surgery.[11] They reviewed the literature and reported that operative management, compared to non operative management, is associated with improved patient reported outcomes and quality of life, however it is associated with significant financial and resource use. They recommend maximizing preoperative surgical health to minimize postoperative complications.
- Reduction in complications and adverse effects from unnecessary procedures. Using the guidelines selection criteria and preoperative risk stratification with patient optimization prior to elective surgery can help minimize complications and death, according to Zuckerman.[9]
- 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

- ➔ **Kyphectomy** is considered appropriate if **ANY** of the following is **TRUE**[1-8]:
  - ◆ **Cervical spine deformity (including myelomeningocele, kyphosis, head-drop syndrome, post-laminectomy deformity)** when **ANY** of the following is **TRUE**[2]:
    - The patient has a clinically significant deformity that makes the patient unable to maintain a forward gaze; **OR**
    - The patient has **ANY** of the following substantial functional limitations:
      - Severe neck pain; **OR**
      - Difficulty ambulating; **OR**
      - Decreased ability to perform activities of daily living; **OR**
    - Progression of cervical deformity is documented; **OR**
  - ◆ **Lumbar spine deformity (e.g., scoliosis restricted to the lumbar spine or a thoracolumbar deformity that ends in the lumbar spine)** when **ANY** of the following is **TRUE**[3]:
    - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented, including detailed evidence of the measures taken, rather than solely a physician's statement; **OR**
    - The patient has a substantial functional limitation (e.g., severe back pain, difficulty ambulating, decreased ability to perform activities of daily living); **OR**
    - **ANY** of the following is **TRUE**:

        - Progression of lumbar deformity is at least 10° (as measured on consecutive radiographs over one year); **OR**
        - Fixed curve greater than 30° in the coronal plane; **OR**
        - Lateral listhesis of at least 10%; **OR**
        - Proximal junctional kyphosis is defined as a segmental Cobb angle of at least 10° or 10° of progression from the immediate postoperative images; **OR**
        - Sagittal or coronal imbalance of at least 5 cm is present (as measured on long-plate, standing radiographs of the entire spine); **OR**
    - **Scheuermann's kyphosis** when **ANY** of the following is **TRUE**[4]:
        - Thoracic kyphosis greater than 75 degrees causing unacceptable deformity[8]; **OR**
        - Thoracic kyphosis greater than 75 degrees associated with pain[8]; **OR**
        - Functionally progressive curve; **OR**
        - Neurologic deficit/spinal cord compression; **OR**
        - Symptomatic kyphotic deformity that is unresponsive to documented conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids), including detailed evidence of the measures taken, rather than solely a physician's statement.

Non-Indications

- **Kyphectomy** is not considered appropriate if **ANY** of the following is **TRUE**:
    - Cervical radiculopathy from isolated foraminal stenosis treated with a partial medial facetectomy/foraminotomy[2].

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
22818	Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body

	and posterior elements); single or 2 segments
22819	Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); 3 or more segments
22899	Unlisted procedure, spine

Medical Evidence

Garg et al. (2011) performed a retrospective review of 23 pediatric patients with myelomeningocele who underwent kyphectomy and spinal fusion. The review assessed the efficacy of kyphectomy to repair an intact skin envelope to allow more comfort when sitting in a wheelchair. Complications of surgery for patients with myelomeningocele were analyzed, as well as if patients requiring an unplanned re-operation experienced additional complications compared to patients with a single procedure. Overall, 17 patients achieved seating balance and skin problems resolved; seven patients required re-operations and operations to treat late infection, pseudarthrosis, implant-related sacral pressure sore, and future extension of proximal fusion after growth.[5]

Samagh et al. (2011) performed a retrospective review of kyphectomy surgical outcomes in patients with myelomeningocele or lumbar kyphosis. These include surgical results, complications, and short-term and midterm outcomes. Preoperative, the mean extent of kyphosis among patients was 115.6° (range, 77-176°); correction was 13.0° (range, 0-32°) post-operatively, a reduction of 88.7%. Pre-operatively, patients could not lie supine; post-operatively, all patients could lie in this position.[6]

The **American Academy of Orthopaedic Surgeons (AAOS)** published a clinical practice guideline on the *Treatment of Symptomatic Osteoporotic Spinal Compression Fractures.* Recommendations are not provided for kyphectomy.[7]

The **North American Spine Society (NASS)** published two recommendations for *Cervical Fusion* and *Lumbar Fusion* which establish support for kyphectomy.[2-3]

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Clinical Guideline Revision History/Information

Original Date: May 27, 2024		
Review History		
Version 2	6/10/2024	422.101 Disclaimer added