Cohere Medicare Advantage Policy - Cervical Spinal Fusion

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System
Guideline Name: Cohere Medicare Advantage Policy - Cervical Spinal Fusion

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

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Medical Necessity Criteria

Service: Cervical Spinal Fusion

Benefit Category

Not applicable.

Recommended Clinical Approach

Surgery provides more rapid relief than non-surgical treatment options. Surgery can also prevent further spinal cord dysfunction and neurological deficits, particularly in moderate or severe cases. Advanced imaging is recommended prior to surgical intervention.[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 cervical spinal fusion. 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:

- Inadequate management of cervical spinal conditions, leading to complications like progression of degenerative joint disease, worsening pain, progression of cervical myelopathy with permanent nerve injury and reduced mobility. If patients with cervical stenosis are being treated conservatively it is important to remember that minor trauma with neck hyperextension can worsen or cause myelopathic symptoms, according to Lannon and Kachur.[3] Progressive myelopathic patients that are denied surgery can have permanent neurologic deficits.
- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk and need for repeat or additional procedures due to adjacent segment disease, hardware failure, pseudoarthrosis or infected hardware requiring removal and revision. Lannon and Kachur also describe risks of cervical spine fusion with can include permanent

neurologic compromise, osteomyelitis, discitis, meningitis, gait disturbance, quadriparesis, bowel or bladder dysfunction, C5 palsy injury to the vertebral and/or carotid arteries resulting in stroke, CSF leak, dislodgement of bone grafts resulting in airway compromise, and adjacent segment disease.[3] GIven these significant complications, selecting appropriate surgical candidates can help minimize this risk. This stressed the importance of clinical guidelines. Bydon et al report reoperation rates for cervical spine fusions as 9.9% at 2.4 years.[5] However, follow up for longer than 2 years resulted in a reoperation rate of 18.3%

- Adverse effects from delayed or denied treatment, which can worsen patient outcomes, such as increased risk of chronic pain and disability.
- 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 cervical spinal fusion for managing various spinal conditions. Degenerative cervical stenosis is a leading cause of cervical myelopathy according to Lannon and Kachur.[3] This can result in chronic spinal cord compression and neurologic disability, so careful diagnosis and treatment is needed. Butterman et al reported patient reported success rates for cervical fusion between 85-95%.[11] Anterior cervical discectomy and fusion lead to improved outcomes for up to 10 years.
- Reduction in complications and adverse effects from unnecessary procedures.
- Smoking is a known risk factor for increased surgical compilations. Nunna et al evaluated 17 studies for a combined cohort of 37,897 patients and identified smoking was associated with one or more major adverse events in 2 level fusions.[12] Berman et al identified that smoking significantly increases the risk of pseudoarthrosis for patients undergoing both lumbar and cervical fusions.[13] In addition to nonunion, the other perioperative complications such as infection, adjacent segment disease and dysphagia are also increased. They recommend smoking cessation for 4 weeks prior to surgery, and consideration of additional support for fusion such as BMPs.
- 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

- ➔ **Cervical Spinal Fusion** is considered appropriate if **ALL** of the following is **TRUE**:
  - ◆ **ANY** of the following is **TRUE**:
    - The patient has not smoked in greater than or equal to the last 6 weeks; **OR**
    - The patient is a smoker with an acute or traumatic lumbar spine condition; **AND**
  - ◆ **ANY** of the following:
    - The procedure is an **anterior or posterior cervical fusion,** and **ANY** of the following is **TRUE**[2-3]:
      - The patient has cervical pseudoarthrosis and **ALL** of the following:
        - ◆ Symptoms (e.g., pain) unresponsive to conservative (nonoperative) therapy; **AND**
        - ◆ Alternative etiologies of symptoms have been ruled out; **OR**
      - The procedure is indicated as part of treatment of a cervical spine injury (e.g., trauma) as indicated by **ALL** of the following:
        - ◆ Acutely symptomatic cervical radiculopathy or myelopathy; **AND**
        - ◆ MRI or other neuroimaging finding (e.g., cord compression, root compression) that

demonstrates pathologic anatomy corresponding to symptoms; **OR**

- The patient has myelopathy, and **ALL** of the following are **TRUE**:
  - **ANY** of the following **myelopathy symptoms**:
    - Gait disturbance or abnormality; **OR**
    - Frequent falls; **OR**
    - Neck, subscapular, shoulder, or upper extremity pain; **OR**
    - Lower or upper extremity weakness; **OR**
    - Paresthesias or numbness in the upper extremities; **OR**
    - Loss of dexterity/coordination; **OR**
    - Bowel or bladder dysfunction; **AND**
  - **ANY** of the following **myelopathy** findings[4]:
    - Lhermitte's sign: an electric shock-like sensation down the spine or into the upper extremities with forward flexion of the cervical spine; **OR**
    - Hoffman's sign; **OR**
    - **ANY** of the following lower motor neuron (LMN) findings in the upper extremities:
      - Weakness; **OR**
      - Atrophy; **OR**
    - **ANY** of the following upper motor neuron (UMN) findings in the lower extremities:
      - Hypertonicity; **OR**
      - Hyperreflexia; **OR**
      - Positive Babinski (extension of toes with distal to proximal plantar stimulation of foot); **OR**
      - Multiple beats or sustained clonus; **OR**
    - Decreased sensation, proprioception, or vibratory sense; **OR**
    - Loss of sphincter tone; **AND**
  - Diagnostic finding of spinal cord compressive pathology consistent with the presentation utilizing the following[5-9]:

- Magnetic resonance imaging (MRI) scans are the preferred advanced imaging diagnostic method; **OR**
- Computed tomography (CT) myelography is recommended in the event of MRI contraindication; **OR**

- The patient has radiculopathy, and **ALL** of the following are **TRUE**:
  - **ANY** of the following **radiculopathy** symptoms:
    - Neck pain; **OR**
    - Arm pain; **OR**
    - Scapular pain; **OR**
    - Periscapular pain; **OR**
    - Anterior chest pain; **OR**
    - Weakness, numbness, or paresthesia in the upper extremity; **OR**
    - Headache; **AND**
  - **ANY** of the following **radiculopathy** findings:
    - Upper extremity motor strength deficit; **OR**
    - Upper extremity sensory deficit; **OR**
    - Absent or decreased deep tendon reflexes; **OR**
    - Scapular winging; **OR**
    - **ANY** of the following positive specialty tests:
      - Spurling's test or maneuver or compression test (reproduction of symptoms with neck extension, lateral flexion, and downward compression or loading; **OR**
      - Shoulder abduction test (symptoms are relieved with shoulder abduction); **AND**
  - Diagnostic finding of spinal cord compressive pathology consistent with the presentation utilizing the following[5-9]:

- Magnetic resonance imaging (MRI) scans are the preferred advanced imaging diagnostic method; **OR**
- Computed tomography (CT) myelography recommended in the event of MRI contraindication; **AND**

◆ **ANY** of the following is **TRUE**:

- The patient fails to show significant improvement in pain or disability level due to symptoms, despite receiving conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 6 weeks. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **OR**
- The patient's severe pain or disability is affecting their quality of life and limiting their daily life (including working and ability to provide self-care); **OR**
- Fracture or instability on radiographic films measuring **ANY** of the following:
  - Sagittal plane angulation greater than 11° at a single level; **OR**
  - Greater than 3.5 mm of anterior subluxation in association with radicular/cord dysfunction; **OR**
  - Subluxation at the (C1) level at the atlantodental interval of more than 3 mm in an adult and 5 mm in a child[10].

Non-Indications

➔ **Cervical Spinal Fusion** may not be considered appropriate if **ANY** of the following is **TRUE**:

◆ In anterior cervical discectomy and fusion (ACDF), when there is ossification of the posterior longitudinal ligament; **OR**

- The patient has smoked within the last 6 weeks (exception for acute or traumatic lumbar spine conditions).

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS/CPT Code	Code Description
20999	Unlisted procedure, musculoskeletal system, general
22532	Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
22548	Arthrodesis, anterior transoral or extraoral technique, clivus-C1-C2 (atlas-axis), with or without excision of odontoid process
22551	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy and decompression of spinal cord and/or nerve roots; cervical below C2
22552	Arthrodesis, anterior interbody, including disc space preparation, discectomy, osteophytectomy and decompression of spinal cord and/or nerve roots; cervical below C2, each additional interspace (List separately in addition to code for primary procedure)
22554	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); cervical below C2
22556	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); thoracic
22585	Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); each additional interspace (List separately in addition to code for primary procedure)

22590	Arthrodesis, posterior technique, craniocervical (occiput-C2)
22595	Arthrodesis, posterior technique, atlas-axis (C1-C2)
22600	Arthrodesis, posterior or posterolateral technique, single interspace; cervical below C2 segment
22610	Arthrodesis, posterior or posterolateral technique, single interspace; thoracic (with lateral transverse technique, when performed)
22614	Arthrodesis, posterior or posterolateral technique, single interspace; each additional interspace (List separately in addition to code for primary procedure)
22634	Arthrodesis, combined posterior or posterolateral technique with posterior interbody technique including laminectomy and/or discectomy sufficient to prepare interspace (other than for decompression), single interspace, lumbar; each additional interspace (List separately in addition to code for primary procedure)
22800	Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments
22802	Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments
22804	Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments
22808	Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments
22810	Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments
22812	Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments
22830	Exploration of spinal fusion
22840	Posterior non-segmental instrumentation (eg, Harrington rod technique, pedicle fixation across 1

	interspace, atlantoaxial transarticular screw fixation, sublaminar wiring at C1, facet screw fixation) (List separately in addition to code for primary procedure)
22841	Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)
22842	Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 3 to 6 vertebral segments (List separately in addition to code for primary procedure)
22845	Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)
22846	Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)
22847	Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)
22849	Reinsertion of spinal fixation device
22853	Insertion of interbody biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to intervertebral disc space in conjunction with interbody arthrodesis, each interspace (List separately in addition to code for primary procedure)
22854	Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh) with integral anterior instrumentation for device anchoring (eg, screws, flanges), when performed, to vertebral corpectomy(ies) (vertebral body resection, partial or complete) defect, in conjunction with interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)

22859	Insertion of intervertebral biomechanical device(s) (eg, synthetic cage, mesh, methylmethacrylate) to intervertebral disc space or vertebral body defect without interbody arthrodesis, each contiguous defect (List separately in addition to code for primary procedure)
22899	Unlisted procedure, spine

Medical Evidence

The North American Spine Society (NASS) has recently published the following Coverage Recommendations:

- NASS Coverage Recommendations (2023) Cervical Fusion (Kreiner et al.): anterior cervical corpectomy recommended in cervical myelopathy; however, they state that instability frequently results from the procedure.
- NASS Coverage Recommendations (2021) Lumbar Fusion (Kreiner et al) 2021: Discusses predominantly lumbar fusion, with mentions of lumbar corpectomy in addition to discectomy as a cause of postoperative spinal instability.

The American College of Radiology (ACR) Expert Panel on Neurological Imaging has published several guidelines related to myelopathic evaluation:

- Agarwal et al. (2021) updated the previous Myelopathy Appropriate Use Criteria, with MRI recommended as initial imaging for acute onset myelopathy as well as chronic or progressive myelopathy due to its superior resolution of soft tissue and ability to evaluate surrounding structures. CT is designated as May Be Appropriate in the ratings, with CT myelography of possible use prior to surgical intervention.[10]
- Hutchins et al. (2021) in the Low Back Pain ACR Appropriateness Criteria recommend noncontrast MRI as Usually Appropriate, and radiography and CT as May Be Appropriate in low back pain with and without radiculopathy. This applies to surgical candidates with persistence or progression of symptoms having failed six weeks of medical management. MRI, CT and CT myelography recommended for suspected cauda equina syndrome. In osteoporosis or chronic steroid use, radiography, noncontrast MRI or CT recommended as Usually Appropriate.[3]

In a systematic review by Lannon et al. (2021), degenerative cervical myelopathy (DCM) is described as a leading cause of spinal cord injury and spinal stenosis with increasing incidence. Early surgical referral is recommended along with conservative management to prevent progressive neurologic compromise.[6]

In a 2020 clinical review, McCormick et al. discuss cervical spondylotic myelopathy including patient presentation of symptoms, preference of MRI as primary imaging, with CT myelography as an alternative in patients with contraindications, and necessity of surgery in moderate to severe cases. Prompt surgical referral is recommended.[14]

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