Cervical Myelopathy

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Other Notices:

Guideline Information:

DiseaseSpecialty Area: Diseases of the musculoskeletal system and connective tissue (M00-M99)
CarePath Group: Spine
CarePath Name: Cervical Myelopathy
Type: [**X**] Adult (18+ yo) | [_] Pediatric (0-17yo)

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Care Path Overview

Care Path Clinical Discussion

Cervical myelopathy is a clinical spinal cord dysfunction syndrome caused by narrowing of the spinal canal, commonly secondary to spondylosis. Mechanical compression of the spinal cord and the neurovascular structures leads to spinal cord dysfunction. This compression can also affect spinal roots (radiculopathy). Spinal cord dysfunction manifests clinically as motor, sensory, gait, or bowel and bladder dysfunction.[1]

Magnetic resonance imaging (MRI) is the imaging modality of choice to fully appreciate the degree of compression and anatomical structures involved.[2] Neurological function in patients with degenerative cervical myelopathy (DCM) is classified by the modified Japanese Orthopedic Association (mJOA) scale as mild, moderate, or severe.[3] Patients with mild disease may be treated nonsurgically and monitored. Patients classified as moderate or severe should undergo surgical consultation.[4]

The information contained herein gives a general overview of the pathway of this specific diagnosis, beginning with initial presentation, recommended assessments, and treatment options as supported by the medical literature and existing guidelines. It should be noted that the care of patients with spinal health problems is complex. The information below is meant to support clinical decision making in adult patients. It is not necessarily applicable to every case, as the entire clinical picture (including comorbidities, spinal health history, etc.) should be considered. Case-by-case treatment decisions are encouraged.

Key Information

- ➢ Since nontraumatic, insidious, degenerative forms of cervical myelopathy are most common, patients are most likely to present symptoms to their primary care provider.
- ➢ The incidence of cervical myelopathy in North America is estimated at .004% and the prevalence is .06%. Risk factors include occupation involving the transportation of goods, advancing age, and Asian ethnicity.[5,6]
- ➢ Conservative treatment is safe for most patients with mild to moderate cervical myelopathy, especially those who have had a shorter duration of symptoms. Studies have shown no significant difference in symptoms as a result of conservative treatment. However, conservative treatment may prevent the worsening of symptoms.[7]

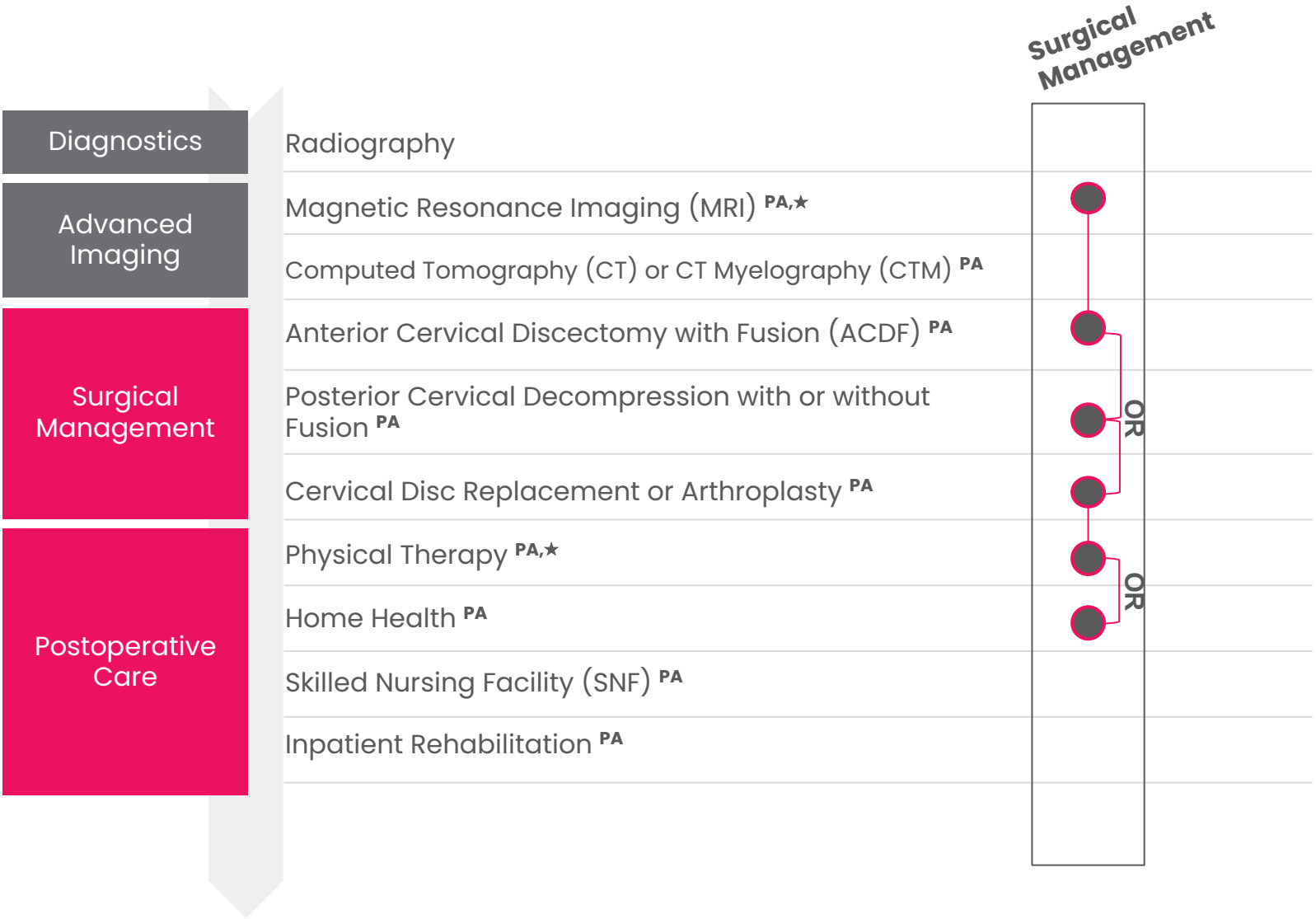
- ➢ Surgical intervention is recommended for patients with moderate or severe cervical myelopathy. It is especially important for patients who have had a longer duration of symptoms because the likelihood of improvement with non-operative measures is low.[4]
- ➢ Although the anterior and posterior surgical approaches produce similar results, some studies advocate for the anterior-only approach. This approach has lower rates of infection complications compared to the posterior-only approach.[4,7]

Definitions

- **Babinski Sign:** The examiner stimulates the lateral plantar aspect of the patient's foot. A positive sign occurs when an extension of the big toe or hallux, such as dorsiflexion or upward movement, occurs.
- **Lhermitte's Sign:** The examiner has a patient flex their cervical spine forward. A positive result occurs if the patient feels an electric shock-like sensation down the spine or in the upper extremities.
- **Hoffman's Sign:** It occurs when an examiner flicks the fingernail of the patient's middle finger down. A positive result occurs when the patient's thumb or index finger involuntarily flexes.

Cervical Myelopathy

What is a "Cohere Care Path"?
These Care Paths organize the services typically considered most clinically optimal and likely to be automatically approved. These service recommendations also include the suggested sequencing and quantity or frequency determined clinically appropriate and medically necessary for the management of most patient care scenarios in this Care Path's diagnostic cohort.



Key

PA = Service may require prior authorization
★ = Denotes preferred service
AND = Services completed concurrently
OR = Services generally mutually exclusive

= Non-surgical management prior authorization group of services
= Surgical management prior authorization group of services
= Subsequent service
= Management path moves to a different management path

Care Path Diagnostic Criteria

Disease Classification

Cervical Myelopathy

ICD-10 Codes Associated with Classification

ICD-10 Code	Code Description/Definition
G95.9	Disease of spinal cord, unspecified
M43.00	Spondylolysis, site unspecified
M43.01	Spondylolysis, occipito-atlanto-axial region
M43.02	Spondylolysis, cervical region
M43.03	Spondylolysis, cervicothoracic region
M43.11	Spondylolisthesis, occipito-atlanto-axial region
M43.12	Spondylolisthesis, cervical region
M43.13	Spondylolisthesis, cervicothoracic region
M43.3	Recurrent atlantoaxial dislocation with myelopathy
M43.4	Other recurrent atlantoaxial dislocation
M45.1	Ankylosing spondylitis of occipito-atlanto-axial region
M45.2	Ankylosing spondylitis of cervical region
M45.3	Ankylosing spondylitis of cervicothoracic region
M45.9	Ankylosing spondylitis of unspecified sites in spine
M46.00	Spinal enthesopathy, site unspecified
M46.01	Spinal enthesopathy, occipito-atlanto-axial region
M46.02	Spinal enthesopathy, cervical region
M46.03	Spinal enthesopathy, cervicothoracic region
M46.20	Osteomyelitis of vertebra, site unspecified
M46.21	Osteomyelitis of vertebra, occipito-atlanto-axial region
M46.22	Osteomyelitis of vertebra, cervical region
M46.23	Osteomyelitis of vertebra, cervicothoracic region

M46.30	Infection of intervertebral disc (pyogenic), site unspecified
M46.31	Infection of intervertebral disc (pyogenic), occipito-atlanto-axial region
M46.32	Infection of intervertebral disc (pyogenic), cervical region
M46.33	Infection of intervertebral disc (pyogenic), cervicothoracic region
M46.39	Infection of intervertebral disc (pyogenic), multiple sites in spine
M46.40	Discitis, unspecified, site unspecified
M46.41	Discitis, unspecified, occipito-atlanto-axial region
M46.42	Discitis, unspecified, cervical region
M46.43	Discitis, unspecified, cervicothoracic region
M46.49	Discitis, unspecified, multiple sites in spine
M47.11	Other spondylosis with myelopathy, occipito-atlanto-axial region
M47.12	Other spondylosis with myelopathy, cervical region
M47.13	Other spondylosis with myelopathy, cervicothoracic region
M47.811	Spondylosis without myelopathy or radiculopathy, occipito-atlanto-axial region
M47.812	Spondylosis without myelopathy or radiculopathy, cervical region
M47.813	Spondylosis without myelopathy or radiculopathy, cervicothoracic region
M47.891	Other spondylosis, occipito-atlanto-axial region
M47.892	Other spondylosis, cervical region
M47.893	Other spondylosis, cervicothoracic region
M48.01	Spinal stenosis, occipito-atlanto-axial region
M48.02	Spinal stenosis, cervical region
M48.03	Spinal stenosis, cervicothoracic region
M48.11	Ankylosing hyperostosis [Forestier], occipito-atlanto-axial region

M48.12	Ankylosing hyperostosis [Forestier], cervical region
M48.13	Ankylosing hyperostosis [Forestier], cervicothoracic region
M48.21	Kissing spine, occipito-atlanto-axial region
M48.22	Kissing spine, cervical region
M48.23	Kissing spine, cervicothoracic region
M48.31	Traumatic spondylopathy, occipito-atlanto-axial region
M48.32	Traumatic spondylopathy, cervical region
M48.33	Traumatic spondylopathy, cervicothoracic region
M48.8X1	Other specified spondylopathies, occipito-atlanto-axial region
M48.8X2	Other specified spondylopathies, cervical region
M48.8X3	Other specified spondylopathies, cervicothoracic region
M49.81	Spondylopathy in diseases classified elsewhere, occipito-atlanto-axial region
M49.82	Spondylopathy in diseases classified elsewhere, cervical region
M49.83	Spondylopathy in diseases classified elsewhere, cervicothoracic region
M50.0	Cervical disc disorder with myelopathy
M50.00	Cervical disc disorder with myelopathy, unspecified cervical region
M50.01	Cervical disc disorder with myelopathy, high cervical region
M50.02	Cervical disc disorder with myelopathy, mid-cervical region
M50.020	Cervical disc disorder with myelopathy, mid-cervical region, unspecified level
M50.021	Cervical disc disorder at C4-C5 level with myelopathy
M50.022	Cervical disc disorder at C5-C6 level with myelopathy
M50.023	Cervical disc disorder at C6-C7 level with myelopathy

M50.03	Cervical disc disorder with myelopathy, cervicothoracic region
M53.2X1	Spinal instabilities, occipito-atlanto-axial region
M53.2X2	Spinal instabilities, cervical region
M53.2X3	Spinal instabilities, cervicothoracic region
M54.2	Cervicalgia
M99.10	Subluxation complex (vertebral) of head region
M99.11	Subluxation complex (vertebral) of cervical region
M99.20	Subluxation stenosis of neural canal of head region
M99.21	Subluxation stenosis of neural canal of cervical region
M99.30	Osseous stenosis of neural canal of head region
M99.31	Osseous stenosis of neural canal of cervical region
M99.40	Connective tissue stenosis of neural canal of head region
M99.41	Connective tissue stenosis of neural canal of cervical region
M99.50	Intervertebral disc stenosis of neural canal of head region
M99.51	Intervertebral disc stenosis of neural canal of cervical region
M99.60	Osseous and subluxation stenosis of intervertebral foramina of head region
M99.61	Osseous and subluxation stenosis of intervertebral foramina of cervical region
M99.70	Connective tissue and disc stenosis of intervertebral foramina of head region
M99.71	Connective tissue and disc stenosis of intervertebral foramina of cervical region

Presentation and Etiology

Causes and Risk Factors

The most common risk factor for cervical myelopathy is congenital spinal stenosis.

Clinical Presentation

Symptoms are commonly bilateral and have insidious onset (but may begin acutely after injury). Symptoms include:

- Gait disturbance or abnormality
- Frequent falls
- Neck, subscapular, shoulder, or upper extremity pain
- Lower or upper extremity weakness
- Paresthesias or numbness in the upper extremities
- Loss of dexterity/coordination
- Bowel or bladder dysfunction

Typical Physical Exam Findings

The following findings may be found on physical examination singularly or in combination:

- Lhermitte's sign: an electric shock-like sensation down the spine or into the upper extremities with forward flexion of the cervical spine
- Hoffman's sign
- Lower motor neuron (LMN) findings in the upper extremities:
    - Weakness
    - Atrophy
- Upper motor neuron (UMN) findings in the lower extremities:
    - Hypertonicity
    - Hyperreflexia
    - Positive Babinski (extension of toes with distal to proximal plantar stimulation of foot)
    - Multiple beats or sustained clonus
- Decreased sensation, proprioception, or vibratory sense
- Loss of sphincter tone

Typical Diagnostic Findings

Magnetic resonance imaging (MRI) scans are the preferred advanced imaging diagnostic method.[8-9]

Care Path Services & Medical Necessity Criteria

Advanced Imaging

Service: Magnetic Resonance Imaging (MRI)

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach[9-10]:** MRI with and without contrast is recommended for new or increasing symptoms if there is a known or suspected malignancy or infection.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **MRI** is considered appropriate if **ANY** of the following are **TRUE**[9-10]:
- ◆ The patient has **ANY** positive findings from the clinical presentation and typical physical exam findings lists.
- ◆ Patient presents with **ANY** of the following "red flags" :
  - Progressive neurological deficits
  - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
  - Hyperreflexia
  - Hoffman's sign
  - Positive Babinski or clonus
  - Bowel or bladder incontinence
  - Saddle anesthesia

Non-Indications

➔ **MRI** may not be appropriate if **ANY** of the following is **TRUE**[11]:
- ◆ Non-compatible implanted devices
- ◆ Metallic intraocular foreign bodies
- ◆ Claustrophobia

Site of Service Criteria

None.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
72141	MRI of cervical spinal canal and contents, MRI of cervical spinal canal and contents without contrast; MRI of cervical spinal canal and contents without contrast, followed by contrast and further sections
72142	MRI of cervical spinal canal and contents with contrast
72156	MRI of cervical spinal canal and contents without contrast, followed by contrast and further sections

Service: Computed Tomography (CT) or Computed Tomography Myelogram (CTM)

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach[9-10]:** In the absence of red flag signs/symptoms, advanced imaging may not be required at the initial presentation. CTM is recommended if MRI findings and physical examination findings are discordant. CT or CTM may be appropriate if MRI is contraindicated or MRI results are indeterminate.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **CT/CTM** is considered appropriate if **ANY** of the following is **TRUE**[9-10]:

- ◆ The patient is being considered for a CTM and **ALL** of the following are **TRUE**:
  - The patient has **ANY** positive findings from the clinical presentation and typical physical exam findings lists.
  - The patient fails to show significant improvement in pain or disability level due to symptoms, despite more than 6 weeks of conservative care (conservative care includes a combination of physical therapy, provider-directed home exercise program, and anti-inflammatory/pain management medications or oral steroids).
  - MRI is contraindicated or indeterminate for reasons such as an artifact from a previous surgery (e.g., anomalies in visual representation that impact imaging quality).
- ◆ The patient is being considered for a CTM and presents with **ANY** of the following red flags:
  - Progressive neurological deficits.
  - Unsteady gait/balance or generalized lower extremity weakness.
  - Hyperreflexia.
  - Positive Babinski or clonus.
  - Bowel or bladder incontinence.
  - Saddle anesthesia.
- ◆ The patient is being considered for a CT and **ANY** of the following is **TRUE**:

- The patient meets the criteria for MRI or CTM but cannot receive either service due to contraindications.
- MRI or CTM studies are indeterminate.

◆ There is a need to obtain additional information that is not provided by an MRI (e.g., details of the bony anatomy or previous surgery).

Non-Indications

➔ **CT/CTM** may not be considered appropriate if **ANY** of the following is **TRUE**[12-13]:

◆ If the patient is being considered for a CTM and **ANY** of the following is **TRUE**:
- In patients with bleeding disorders.
- In patients with an allergy to iodinated contrast agents.
- In patients who are pregnant.

◆ If the patient is being considered for a CT and **ANY** of the following is **TRUE**:
- The patient is pregnant.

Site of Service Criteria

None.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
72125	Computed tomography (CT) of cervical spine without contrast material
72126	Computed tomography (CT) of cervical spine with contrast material
72127	Computed tomography (CT) of cervical spine without contrast material, followed by contrast material and further sections

Surgical Management

Service: Anterior Cervical Discectomy with Fusion (ACDF)

General Guidelines

- **Units, Frequency, & Duration:** No clearly established consensus or criteria regarding the timing of surgical intervention
- **Criteria for Subsequent Requests:** None.
- **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 recommended prior to surgical intervention.[14-15] ACDF with a plate is suggested or recommended.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **ACDF** is considered appropriate if **ALL** of the following are **TRUE:**

- The patient has one or more positive findings from each of these:
  - Clinical presentation
  - Typical physical exam findings
  - Diagnostic findings
- Advanced imaging demonstrates spinal cord compressive pathology consistent with the presentation.
- **ANY** of the following are **TRUE**:
  - The patient has severe pain or disability level due to their symptoms that affect their quality of life or limit their daily life (including working and being unable to provide self-care), or progressive signs and symptoms.
  - The patient presents with **ANY** of the following "red flags":
    - Progressive neurological deficits
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Hyperreflexia
    - Hoffman's sign
    - Positive Babinski or clonus

Non-Indications

- ➔ **ACDF** may not be considered appropriate if **ALL** of the following are **TRUE**:
  - ◆ There is ossification of the posterior longitudinal ligament.

Site of Service Criteria

None.

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
22551	Arthrodesis by anterior interbody technique of cervical region below C2, including disc space preparation, with discectomy, osteophytectomy, and decompression of nerve root; Arthrodesis by anterior interbody technique of cervical region below C2, including disc space preparation, with discectomy, osteophytectomy, and decompression of spinal cord; Arthrodesis by anterior interbody technique of cervical region below C2, including disc space preparation, with discectomy, osteophytectomy, and decompression of spinal cord and nerve root
22552	Arthrodesis of each additional interspace of cervical region below C2 by anterior interbody technique, including disc space preparation, with discectomy, osteophytectomy, and decompression of spinal cord and nerve root; Arthrodesis of each additional interspace of cervical region below C2 by anterior interbody technique, with discectomy, osteophytectomy, and decompression of nerve root; Arthrodesis of each additional interspace of cervical region below C2, including disc space preparation by anterior interbody technique, with discectomy, osteophytectomy, and decompression of spinal cord
22554	Arthrodesis by anterior interbody technique of cervical region with discectomy; Arthrodesis by anterior interbody technique of cervical region below C2, with minimal discectomy, osteophytectomy, and decompression of nerve root
22845	Anterior Instrumentation 2-3 vertebral segments

22846	Anterior Instrumentation 4-7 vertebral segments
22847	Anterior Instrumentation >/8 vertebral segments
22853	Insertion of biomechanical interbody device with arthrodesis
22854	Insertion of biomechanical device with corpectomy defect w/ arthrodesis
63081	Vertebral corpectomy cervical (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s)
63082	Vertebral corpectomy cervical (vertebral body resection), partial or complete, anterior approach with decompression of spinal cord and/or nerve root(s)

Service: Posterior Cervical Decompression without Fusion: Laminectomy, Foraminotomy, or Laminoforaminotomy

General Guidelines

- **Units, Frequency, & Duration:** There is no clearly established consensus or criteria regarding surgical intervention timing.
- **Criteria for Subsequent Requests:** None.
- **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 recommended prior to surgical intervention.[14-15]
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Posterior cervical decompression without fusion** is considered appropriate if **ALL** of the following are **TRUE**:

- ◆ The patient has one or more positive findings from each of these:
  - Clinical presentation
  - Typical physical exam findings
  - Diagnostic findings
- ◆ Advanced imaging demonstrates spinal cord compressive pathology consistent with the presentation.[16]
- ◆ **ANY** of the following are **TRUE**:
  - The patient has severe pain or disability level due to their symptoms that affect their quality of life or limit their daily life (including working and being unable to provide self-care), or progressive signs and symptoms.
  - The patient presents with **ANY** of the following "red flags":
    - Progressive neurological deficits[16]
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Hyperreflexia
    - Hoffman's sign
    - Positive Babinski or clonus

Non-Indications

- ➔ **Posterior cervical decompression without fusion** is not considered appropriate if **ALL** of the following are **TRUE**[10]:
  - ◆ The patient has kyphosis or is at risk for postoperative kyphosis.

Site of Service Criteria

Inpatient or outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
63001	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), 1 or 2 vertebral segments
63015	Laminectomy with exploration and/or decompression of spinal cord and/or cauda equina, without facetectomy, foraminotomy or discectomy (eg, spinal stenosis), more than 2 vertebral segments
63020	Hemilaminectomy and foraminotomy of single interspace of cervical spine with decompression of nerve root; Hemilaminectomy and foraminotomy of single interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root; Hemilaminectomy and partial facetectomy of single interspace of cervical spine with decompression of nerve root; Hemilaminectomy and partial facetectomy of single interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root; Hemilaminectomy of single interspace of cervical spine with decompression of nerve root; Hemilaminectomy of single interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy of single interspace of cervical spine with decompression of nerve root
63035	Hemilaminectomy and foraminotomy of each additional interspace of cervical spine with decompression of nerve root; Hemilaminectomy and foraminotomy of each

	additional interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy of each additional interspace of cervical spine with decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy of each additional interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root
63040	Hemilaminectomy and foraminotomy for re-exploration of single interspace of cervical spine with decompression of nerve root; Hemilaminectomy and foraminotomy for re-exploration of single interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy for re-exploration of single interspace of cervical spine with decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy for re-exploration of single interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root
63043	Hemilaminectomy and foraminotomy for re-exploration of each additional interspace of cervical spine with decompression of nerve root; Hemilaminectomy and foraminotomy for re-exploration of each additional interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy for re-exploration of each additional interspace of cervical spine with decompression of nerve root; Hemilaminectomy, partial facetectomy, and foraminotomy for re-exploration of each additional interspace of cervical spine with excision of herniated intervertebral disc and decompression of nerve root
63045	Bilateral laminectomy, facetectomy, and foraminotomy of single cervical vertebral segment with decompression of nerve root; Bilateral laminectomy, facetectomy, and foraminotomy of single cervical vertebral segment with decompression of spinal cord; Bilateral laminectomy, facetectomy, and foraminotomy of single cervical vertebral segment with decompression of spinal cord and nerve root; Unilateral laminectomy, facetectomy, and

	foraminotomy of single cervical vertebral segment with decompression of nerve root; Unilateral laminectomy, facetectomy, and foraminotomy of single cervical vertebral segment with decompression of spinal cord; Unilateral laminectomy, facetectomy, and foraminotomy of single cervical vertebral segment with decompression of spinal cord and nerve root
63048	Bilateral laminectomy, facetectomy, and foraminotomy of each additional cervical vertebral segment with decompression of nerve root; Bilateral laminectomy, facetectomy, and foraminotomy of each additional cervical vertebral segment with decompression of spinal cord; Bilateral laminectomy, facetectomy, and foraminotomy of each additional cervical vertebral segment with decompression of spinal cord and nerve root; Unilateral laminectomy, facetectomy, and foraminotomy of each additional cervical vertebral segment with decompression of nerve root; Unilateral laminectomy, facetectomy, and foraminotomy of each additional cervical vertebral segment with decompression of spinal cord; Unilateral laminectomy, facetectomy, and foraminotomy of each additional cervical vertebral segment with decompression of spinal cord and nerve root
63050	Laminoplasty, cervical, with decompression of the spinal cord, two or more vertebral segments
63051	Laminoplasty with reconstruction of the posterior bony elements (including the application of bridging bone graft and non-segmental fixation devices (e.g., wire, suture, mini-plates), when performed.

Service: Posterior Decompression with Fusion

General Guidelines

- **Units, Frequency, & Duration:** No clearly established consensus or criteria regarding the timing of surgical intervention
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach**[16]: 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. For myelopathy due to single-level cervical spinal cord compression, a posterior approach may be more appropriate in certain patients, including patients with prior anterior neck surgery or radiation, pre-existing dysphagia, or conditions such as ossification of the posterior longitudinal ligament (OPLL).
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Posterior cervical decompression with fusion** is considered appropriate if **ALL** of the following are **TRUE**[16]:

- ◆ The patient has one or more positive findings from each of these:
  - Clinical presentation
  - Typical physical exam findings
  - Diagnostic findings
- ◆ Advanced imaging demonstrates spinal cord compressive pathology consistent with the presentation.
- ◆ **ANY**of the following are **TRUE**:
  - The patient has severe pain or disability level due to their symptoms that affect their quality of life or limit their daily life (including working and being unable to provide self-care), or progressive signs and symptoms.
  - The patient presents with **ANY** of the following "red flags":
    - Progressive neurological deficits
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Hyperreflexia
    - Hoffman's sign
    - Positive Babinski or clonus

Non-Indications

None.

Site of Service Criteria

Inpatient or outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
22600	Arthrodesis of cervical vertebral segment below C2 by posterior technique; Arthrodesis of cervical vertebral segment below C2 by posterolateral technique
22614	Arthrodesis of each additional vertebral segment of a single level by posterior technique; Arthrodesis of each additional vertebral segment of a single level by posterolateral technique
22840	Posterior non segmental instrumentation
22842	Posterior segmental instrumentation 3-6 vertebral segments
22843	Posterior segmental instrumentation 7-12_vertebral segments
22844	Posterior segmental instrumentation >/13 vertebral segments
64708	Release of nerve of arm or leg, open procedure
64714	Release of nerve of upper leg, open procedure

Service: Cervical Disc Replacement or Arthroplasty

General Guidelines

- **Units, Frequency, & Duration:** There is no clearly established consensus or criteria regarding the timing of surgical intervention
- **Criteria for Subsequent Requests:** None.
- **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.[14-15] For myelopathy due to single-level cervical spinal cord compression, outcomes of ACDF and cervical disc replacement are similar; either may be considered.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Cervical disc replacement** is considered appropriate if **ALL** of the following are **TRUE**:

- ◆ The patient has one or more positive findings from each of these:
  - Clinical presentation
  - Typical physical exam findings
  - Diagnostic findings
- ◆ Advanced imaging demonstrates spinal cord compressive pathology consistent with the presentation.[10]
- ◆ **ANY** of the following are **TRUE**:
  - The patient has severe pain or disability level due to their symptoms that affect their quality of life or limit their daily life (including working and being unable to provide self-care), or progressive signs and symptoms.
  - The patient presents with **ANY** of the following "red flags":
    - Progressive neurological deficits
    - Unsteady gait related to myelopathy/balance or generalized lower extremity weakness
    - Hyperreflexia
    - Hoffman's sign
    - Positive Babinski or clonus

Non-Indications

- → **Cervical disc replacement /arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**[17]:
  - There are more than 2 symptomatic levels.[10]
  - Instability as indicated by **ANY** of the following
    - Translation is greater than 3 mm difference between lateral flexion-extension views at the symptomatic levels
    - 11° of angular difference between lateral flexion-extension views at the symptomatic levels
    - The patient has dynamic instability (greater than 3.5 mm translation on flexion-extension)
  - Severe spondylosis as indicated by **ANY** of the following
    - More than 50% disc height loss compared to minimally or non-degenerated levels
    - Bridging osteophytes
    - Absence of motion on lateral flexion-extension views at the symptomatic site
  - Active infection
  - Known malignancy
  - Allergy to implant materials
  - Metabolic bone disease (e.g., osteoporosis, renal osteodystrophy)
  - Severe facet arthropathy
  - Ankylosing spondylitis
  - Rheumatoid arthritis
  - Previous fracture with anatomical deformity
  - Ossification of the posterior longitudinal ligament (OPLL)
  - Active cervical spine malignancy
  - Advanced imaging shows more than 50% disc degeneration
  - Absence of motion on flexion-extension views
  - Severe facet arthropathy
  - Ankylosing spondylitis

Site of Service Criteria

Inpatient or outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
22856	Total disc arthroplasty of single cervical vertebral interspace by anterior approach with discectomy and end plate preparation, including osteophytectomy for nerve root decompression and microdissection; Total disc arthroplasty of single cervical vertebral interspace by

	anterior approach with discectomy and end plate preparation, including osteophytectomy for spinal cord decompression and microdissection; Total disc arthroplasty of single cervical vertebral interspace by anterior approach
22858	Total disc arthroplasty of second level cervical vertebra by anterior approach with discectomy with end plate preparation
22861	Revision of total disc arthroplasty of single cervical vertebral interspace by anterior approach with replacement of artificial disk
22864	Removal of artificial disc from total disc arthroplasty of single cervical vertebral interspace by anterior approach
0098T	Revision including replacement of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, cervical (List separately in addition to code for primary procedure)
0095T	Removal of total disc arthroplasty (artificial disc), anterior approach, each additional interspace, cervical (List separately in addition to code for primary procedure)

Surgical Risk Factors

Patient Medical Risk Stratification

Patient Risk Score	Patient Characteristic	Min Range	Max Range	Guidance
1- Very Low Risk	No known medical problems			
2- Low Risk	Hypertension		180/110 mm Hg	
2- Low Risk	Asthma	peak flow >80% of predicted or personal best value		
2- Low Risk	Prior history of alcohol abuse			Screen for liver disease and malnutrition
2- Low Risk	Prior history of tobacco use			
3- Intermediate Risk	Asthma	peak flow <80% of predicted or personal best value		
3- Intermediate Risk	Active alcohol abuse			
3- Intermediate Risk	Age	65	75	
3- Intermediate Risk	History of treated, stable coronary artery disease (CAD)			
3- Intermediate Risk	Stable atrial fibrillation			
3- Intermediate Risk	Diabetes mellitus	HbA1C >7%		
3- Intermediate Risk	Morbid obesity	BMI 30	BMI 40	
3- Intermediate Risk	Anemia	hemoglobin <11 (females), <12 (males)		Workup to identify etiology
3- Intermediate Risk	HIV	CD4 <200 cells/mm3		Get clearance from HIV specialist

3- Intermediate Risk	Rheumatologic disease			Preoperative consultation with rheumatologist re: perioperative medication management
3- Intermediate Risk	Peripheral vascular disease or history of peripheral vascular bypass	ankle-brachial pressure index (ABPI) <0.9		Preoperative consultation with vascular surgeon
3- Intermediate Risk	History of venous thromboembolism (VTE)			
3- Intermediate Risk	Well-controlled obstructive sleep apnea			
3- Intermediate Risk	Malnutrition	transferrin <200 mg/dL albumin <3.5 g/dL prealbumin <22.5 mg/dL total lymphocyte count <1200-1500 cell/mm3 BMI <18		Preoperative consultation with nutritionist
3- Intermediate Risk	Active tobacco Use			Enroll patient in smoking cessation program
4- High Risk	Diabetes mellitus with complications	HbA1c >8%		
4- High Risk	Age	76	85	
4- High Risk	Oxygen dependent pulmonary disease			
4- High Risk	Sickle cell anemia			
4- High Risk	Obesity	BMI 40		
4- High Risk	Cirrhosis, history of hepatic decompensation or variceal bleeding			

4- High Risk	Impaired cognition; dementia			
4- High Risk	Compensated CHF			
4- High Risk	Cerebrovascular disease			
4- High Risk	Uncontrolled or suspected obstructive sleep apnea (OSA)			
4- High Risk	Renal insufficiency	serum creatinine >1.5 mg/dL or creatinine clearance <100 mL/min		
4- High Risk	Opioid dependence			
4- High Risk	End Stage Liver Disease			
4- High Risk	Uncontrolled Seizure Disorder			
4- High Risk	History of Malignant Hyperthermia			
5- Very High Risk	Cardiovascular: unstable angina, recent myocardial infarction (60 days), uncontrolled atrial fibrillation or other high-grade abnormal rhythm, severe valvular disease, decompensated heart failure			
5- Very High Risk	Primary pulmonary hypertension			Preoperative consultation with pulmonologist warranted
5- Very High Risk	Cirrhosis or severe liver disease, history of hepatic decompensation or variceal bleeding			
5- Very High Risk	Severe frailty, dependence for ADLs, or history of 3 or more falls in last 6 mos			
5- Very High Risk	Obesity		BMI >50	
5- Very High Risk	Age		>85	

5- Very High Risk	History of VTE with CI to anticoagulation, failure of anticoagulation, cessation of anticoagulation therapy secondary to bleeding			Preoperative consultation with hematologist or internist
5- Very High Risk	Renal failure requiring dialysis			
5- Very High Risk	Immunosuppression			
5- Very High Risk	Chronic Pain			

Postoperative Care

Service: Physical Therapy

General Guidelines

- **Units, Frequency, & Duration**[18]: Physical therapy may be prescribed for 4-6 weeks after cervical fusion surgery. Education and activity supervision may begin immediately. Formal spine rehabilitation may begin later to allow fusion healing (approximately 8-12 weeks). Rehabilitation may be appropriate up to 6 months post-fusion.
- **Criteria for Subsequent Requests:** The patient should be progressing towards goals in the physical therapy plan without fully obtaining all goals.
- **Recommended Clinical Approach:** None.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Physical therapy** is considered appropriate if **ANY** of the following is **TRUE**:

- ◆ The patient underwent surgical treatment.[18]
- ◆ The patient needs preoperative surgical optimization immediately prior to surgery.

Non-Indications

None.

Site of Service Criteria

Outpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
97010	Application of hot or cold packs
97012	Application of mechanical traction
97014	Application of electrical stimulation

97016	Application of vasopneumatic devices
97018	Application of paraffin bath
97022	Application of whirlpool
97024	Application of diathermy
97026	Application of infrared modality
97028	Application of ultraviolet modality
97032	Application of manual electrical stimulation
97033	Application of iontophoresis
97034	Application of contrast baths
97035	Application of ultrasound modality
97036	Application of Hubbard tank
97039	Modality service
97110*	Therapeutic exercises to develop strength and endurance, range of motion and flexibility
97112	Neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and proprioception for sitting and standing activities
97113	Aquatic therapy with therapeutic exercises
97116	Gait training including stair climbing
97124	Massage including effleurage and petrissage; Massage including effleurage and tapotement; Massage including effleurage, petrissage and tapotement; Massage including petrissage and tapotement
97139	Therapeutic procedure
97140	Manual therapy techniques
97150	Group therapeutic procedures
97164	Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient 20 minutes;

	Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient and family 20 minutes; Physical therapy re-evaluation of established plan of care, high complexity, typical time with patient's family 20 minutes
97530	Direct therapeutic activities with use of dynamic activities to improve functional performance, each 15 minutes
97535	Home management training, direct one-on-one contact, each 15 minutes; Self-care management training, direct one-on-one contact, each 15 minutes
97537	Community reintegration training, direct one-on-one contact, each 15 minutes; Work reintegration training, direct one-on-one contact, each 15 minutes
97542	Wheelchair management, each 15 minutes
97545	Work conditioning, initial 2 hours; Work hardening, initial 2 hours
97546	Work conditioning, each additional hour; Work hardening, each additional hour
97750	Physical performance measurement with written report, each 15 minutes; Physical performance test with written report, each 15 minutes
97755	Assistive technology assessment with written report, direct one-on-one contact, each 15 minutes
97760	Initial orthotic management and training with assessment and fitting of lower extremities and trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremities, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremity and trunk, each 15 minutes; Initial orthotic management and training with assessment and fitting of lower extremity, each 15 minutes; Initial orthotic management and training with assessment and fitting of trunk, each 15 minutes; Initial orthotic management and

	training with assessment and fitting of upper and lower extremities and trunk, each 15 minutes
97761	Initial prosthetic training of lower extremities, each 15 minutes; Initial prosthetic training of lower extremity, each 15 minutes Initial prosthetic training of upper and lower extremities, each 15 minutes; Initial prosthetic training of upper extremities, each 15 minutes; Initial prosthetic training of upper extremity, each 15 minutes
97763	Subsequent orthotic management and training of lower extremities and trunk, each 15 minutes Subsequent orthotic management and training of lower extremity and trunk, each 15 minutes Subsequent orthotic management and training of lower extremity, each 15 minutes Subsequent orthotic management and training of upper and lower extremities and trunk, each 15 minutes Subsequent orthotic management and training of upper extremities and trunk, each 15 minutes Subsequent orthotic management and training of upper extremities, each 15 minutes Subsequent orthotic management and training of upper extremity and trunk, each 15 minutes Subsequent orthotic management and training of upper extremity, each 15 minutes Subsequent orthotic management of lower extremities and trunk, each 15 minutes Subsequent orthotic management of lower extremity and trunk, each 15 minutes Subsequent orthotic management of lower extremity, each 15 minutes Subsequent orthotic management of upper and lower extremities and trunk, each 15 minutes Subsequent orthotic management of upper extremities and trunk, each 15 minutes Subsequent orthotic management of upper extremities,

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	trunk, each 15 minutes Subsequent prosthetic training of lower extremities, each 15 minutes Subsequent prosthetic training of lower extremity and trunk, each 15 minutes
97799	Unlisted physical medicine/rehabilitation service or procedure
420	Physical Therapy
421	Physical Therapy: Visit Charge
422	Physical Therapy: Hourly Charge
423	Physical Therapy: Group Rate
424	Physical Therapy: Evaluation/Re-evaluation
429	Physical Therapy: Other Physical Therapy
97163	Evaluation of physical therapy, typically 45 minutes
97161	Evaluation of physical therapy, typically 20 minutes
97162	Evaluation of physical therapy, typically 30 minutes
97168	Re-evaluation of occupational therapy established plan of care, typically 30 minutes
97165	Evaluation of occupational therapy, typically 30 minutes
97166	Evaluation of occupational therapy, typically 45 minutes
97167	Evaluation of occupational therapy established plan of care, typically 60 minutes
G0151	Hhcp-serv of pt,ea 15 min

*Default codes for suggested services

Service: Home Health Care

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** Home health care may be recommended for postoperative care if outpatient treatment is not indicated based on hospital case management recommendations
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Home health care** may be appropriate if **ALL** of the following are **TRUE**:
- ◆ The patient lives with those that are unable to care for the patient postoperatively.
- ◆ The patient underwent surgical treatment.

Non-Indications

None.

Site of Service Criteria

Home

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
99509	Home visit for assistance with activities of daily living and personal care
99600	Unlisted home visit procedure; Unlisted home visit service
99334	Level 1 rest home visit for evaluation and management of established patient with minor and/or self-limited problem, including problem-focused interval history and physical examination, and straightforward medical decision-making, typical time with patient, family, and/or caregiver 15 minutes
G0129	Partial hosp prog service
G0283	Elec stim other than wound

Service: Inpatient Rehabilitation

General Guidelines

- **Units, Frequency, & Duration:** Postoperative rehabilitation is recommended to begin as soon as possible for all patients. No guidelines are available for the specific duration, timing, or frequency.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** There are no firmly established criteria for discharge appropriateness. Discharge depends upon medical stability, pain control, home situation, and if PT/OT goals were met. Some patients may require non-home discharge after surgery depending upon their age, comorbidities, and functional needs. Rehabilitation guidelines are not firmly established. There are no data available on outcomes nor firm recommendations on appropriate discharge destination. Post-acute care may be warranted. Cognitive behavioral therapy (CBT) may be included in postoperative rehabilitation programs.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Inpatient rehabilitation** is considered appropriate if **ALL** of the following is **TRUE**:

- ◆ If **ANY** of the following are **TRUE**:
  - Neurologic deficit occurs postoperatively.
  - Postoperative complications.
  - Multiple medical comorbidities.
  - The patient requires maximum assistance for mobility.
  - The patient does not have others to take care of them at home.
- ◆ The patient underwent surgical treatment

Non-Indications

None.

Site of Service Criteria

Inpatient

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
97799	Physical medicine service

Service: Skilled Nursing Facility (SNF)

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** May be indicated for postoperative care in cases where the surgery occurred at an inpatient hospital, and outpatient physical therapy or home health care are not indicated.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Skilled nursing facilities (SNF)** are considered appropriate if **ALL** of the following is **TRUE**:

- ◆ If **ANY** of the following are **TRUE**:
  - Neurologic deficit occurs postoperatively.
  - Postoperative complications.
  - Multiple medical comorbidities.
  - The patient requires maximum assistance for mobility.
  - The patient does not have others to take care of them at home.
- ◆ The patient underwent surgical treatment

Non-Indications

None.

Site of Service Criteria

Nursing facility

Procedure Codes (HCPCS/CPT)

HCPCS Code	Code Description/Definition
99304	Level 1 initial nursing facility care for evaluation and management of patient with problem of low severity, including comprehensive history and physical examination, and medical decision-making of low complexity, typical time 25 minutes; Level 1 initial nursing facility care for evaluation and management of patient with problem of low severity, including detailed history

	and physical examination, and straightforward medical decision-making, typical time 25 minutes
99305	Level 2 initial nursing facility care for evaluation and management of patient with problem of moderate severity, including comprehensive history and physical examination, and medical decision-making of moderate complexity, typical time 35 minutes
99306	Level 3 initial nursing facility care for evaluation and management of patient with problem of high severity, including comprehensive history and physical examination, and medical decision-making of high complexity typical time 45 minutes
99307	Level 1 subsequent nursing facility care for evaluation and management of patient, including problem-focused interval history and physical examination, and straightforward medical decision-making, typical time 10 minutes; Level 1 subsequent nursing facility care for evaluation and management of patient, including problem-focused interval history and physical examination, typical time 10 minutes; Level 1 subsequent nursing facility care for evaluation and management of patient, including problem-focused interval history and straightforward medical decision-making, typical time 10 minutes; Level 1 subsequent nursing facility care for evaluation and management of patient, including problem-focused physical examination and straightforward medical decision-making, typical time 10 minutes
99308	Level 2 subsequent nursing facility care for evaluation and management of patient, including expanded problem-focused interval history and medical decision-making of low complexity, typical time 15 minutes; Level 2 subsequent nursing facility care for evaluation and management of patient, including expanded problem-focused interval history and physical examination, and medical decision-making of low complexity, typical time 15 minutes; Level 2 subsequent nursing facility care for evaluation and management of patient, including expanded problem-focused interval history and physical examination, typical time 15 minutes; Level 2 subsequent nursing facility care for evaluation and

	management of patient, including expanded problem-focused physical examination and medical decision-making of low complexity, typical time 15 minutes
99309	Level 3 subsequent nursing facility care for evaluation and management of patient, including detailed interval history and medical decision-making of moderate complexity, typical time 25 minutes; Level 3 subsequent nursing facility care for evaluation and management of patient, including detailed interval history and physical examination, and medical decision-making of moderate complexity. typical time 25 minutes; Level 3 subsequent nursing facility care for evaluation and management of patient, including detailed interval history and physical examination, typical time 25 minutes; Level 3 subsequent nursing facility care for evaluation and management of patient, including detailed physical examination and medical decision-making of moderate complexity, typical time 25 minutes
99310	Level 4 subsequent nursing facility care for evaluation and management of patient, including comprehensive interval history and medical decision-making of high complexity, typical time 35 minutes; Level 4 subsequent nursing facility care for evaluation and management of patient, including comprehensive interval history and physical examination, and medical decision-making of high complexity, typical time 35 minutes; Level 4 subsequent nursing facility care for evaluation and management of patient, including comprehensive interval history and physical examination, typical time 35 minutes; Level 4 subsequent nursing facility care for evaluation and management of patient, including comprehensive physical examination and medical decision-making of high complexity, typical time 35 minutes
99315	Nursing facility discharge day management, 30 minutes or less
99316	Nursing facility day management, more than 30 minutes
G0128	Corf skilled nursing service

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Clinical Guideline Revision History/Information

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November 19, 2021 (V.3)	**Reviewing Physician:** Dr. Vijay Yanamadala **Approving Physician:** Dr. Brian Covino
December 29, 2022 (V.4)	**Reviewing Physician:** Dr. Vijay Yanamadala **Approving Physician:** Dr. Traci Granston