Lumbar Spinal Fusion
Corporate Medical Policy

Description/Summary

Lumbar spinal fusion (arthrodesis) is a surgical technique that involves fusion of 2 or more lumbar vertebrae using local bone, autologous bone taken from the iliac crest of the patient, allogeneic donor bone, or bone graft substitutes. There are numerous potential indications for lumbar spinal fusion. Spinal fusion can be performed as a single procedure, or can be performed in conjunction with other spinal surgeries. For example, lumbar spinal fusion can be performed in combination with discectomy for either herniated discs or degenerative disc disease, or in combination with decompressive surgery of the spinal canal for spinal stenosis.

For individuals who have spinal stenosis undergoing decompressive surgery who receive lumbar spinal fusion, the evidence includes randomized controlled trials (RCTs).

Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. There are 2 RCTs that compared decompressive surgery plus fusion to decompressive surgery alone. These trials reached different conclusions on the benefit of adding fusion to decompression in patients with low-grade (0%-25% slippage) spondylolisthesis. Both trials reported a larger number of operative and perioperative adverse outcomes with the addition of fusion. The SSS trial found no benefit of surgery on clinical outcomes, while the SLIP trial reported a small benefit in clinical outcomes and a reduction in number of subsequent surgeries when fusion was added to decompression. In the SPORT trial, decompressive surgery plus fusion was compared to conservative, nonsurgical treatment. Ninety-five percent of patients in the surgical group underwent decompression with fusion and had better outcomes than patients receiving non-operative therapy. This trial, however, did not isolate the impact of fusion apart from that of decompressive surgery. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have juvenile idiopathic scoliosis who receive lumbar spinal fusion, the evidence includes a large case series and society guidelines. Relevant outcomes are
symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. Long-term follow-up of the large case series and guidelines from the Scoliosis Research Society provide support that fusion can reduce curve progression in patients with Cobb angles greater than 40°. The evidence is sufficient to determine qualitatively that the technology results in a meaningful improvement in the net health outcome.

For individuals who have adult degenerative scoliosis who receive lumbar spinal fusion, the evidence includes a nonrandomized comparative study. Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. No RCTs were identified on the treatment of adult symptomatic lumbar scoliosis with fusion. A cohort study found superior outcomes in patients treated with fusion compared with non-operative controls. This evidence and the strong rationale indicates that lumbar spinal fusion improves outcomes in adults with degenerative scoliosis. The evidence is sufficient to determine qualitatively that the technology results in a meaningful improvement in the net health outcome.

For individuals who have isthmic spondylolisthesis who receive lumbar spinal fusion, the evidence includes an RCT. Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. The RCT compared fusion to an exercise program in patients with symptomatic isthmic spondylolisthesis. Results support the conclusion that fusion improves functional status for this condition. The evidence is sufficient to determine qualitatively that the technology results in a meaningful improvement in the net health outcome.

For individuals who have spinal fracture who receive lumbar spinal fusion, the evidence includes RCTs and meta-analyses of RCTs. Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. Results of 1 small randomized trial indicate that spinal fusion for patients with spinal fracture without instability or neural compression may result in worse outcomes than nonsurgical management. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have lumbar disc herniation with radiculopathy who receive lumbar spinal fusion, the evidence includes an RCT and a nonrandomized comparative study. Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. Current evidence, which includes the large SPORT RCT, supports surgical treatment with discectomy for lumbar disc herniation. Evidence is insufficient to conclude that the addition of fusion to discectomy improves outcomes in patients with lumbar disc herniation without instability. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have chronic low back pain without radiculopathy who receive lumbar spinal fusion, the evidence includes RCTs and meta-analyses of RCTs. Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. Meta-analysis of results from 4 RCTs found no clinically significant advantage of lumbar fusion over conservative therapy in patients with
nonspecific chronic low back pain unresponsive to conservative management. While some trials have reported a benefit, others have not. The evidence is insufficient to determine the effects of the technology on health outcomes.

Clinical input on the indications for lumbar spinal fusion was obtained when this policy was created in 2014. The input supported the use of lumbar spinal fusion under conditions of spinal instability, including stenosis with spondylolisthesis and recurrent disc herniation. Based on the results of clinical vetting, spinal fusion combined with decompressive surgery may be considered medical necessary when conservative treatment has failed in patients with stenosis plus spondylolisthesis or recurrent disc herniation.

Policy

Coding Information
Click the links below for attachments, coding tables & instructions.
Attachment I

When a service may be considered medically necessary

Lumbar spinal fusion may be considered medically necessary for any one of the following conditions:

1. Spinal stenosis with both of the following:
   a. Any one of the following
      1. Associated spondylolisthesis demonstrated on plain x-rays; OR
      2. Spinal instability demonstrated on imaging studies; OR
      3. Spinal instability is anticipated due to need for bilateral or wide decompression with facetectomy or resection of pars interarticularis; AND
   b. Either of the following
      1. Neurogenic claudication or radicular pain that results in significant functional impairment in a patient who has failed at least 3 months of conservative care and has documentation of central/lateral recess/or foraminal stenosis on magnetic resonance imaging or other imaging, OR
      2. Severe or rapidly progressive symptoms of motor loss, neurogenic claudication, or cauda equina syndrome

2. Severe, progressive idiopathic scoliosis with either of the following:
   a. Cobb angle greater than 40°
   b. Spinal cord compression with neurogenic claudication or radicular pain that results in significant functional impairment in a patient who has failed at least 3 months of conservative care

3. Severe degenerative scoliosis (ie, lumbar or thoracolumbar) with a minimum Cobb angle of 30°, or significant sagittal imbalance (eg, sagittal vertical axis >5cm), and with any one of the following:
   a. Documented progression of deformity with persistent axial (nonradiating) pain and impairment or loss of function unresponsive to at least 1 year of
conservative therapy
b. Persistent and significant neurogenic symptoms (claudication or radicular pain) with impairment or loss of function, unresponsive to at least 1 year of conservative nonsurgical care
c. Severe or rapidly progressive symptoms of motor loss, neurogenic claudication, or cauda equina syndrome

4. Isthmic spondylolisthesis, when all of the following are present:
   a. Congenital (Wiltse type I) or acquired pars defect (Wiltse II), documented on x-ray, and:
      b. Persistent back pain (with or without neurogenic symptoms), with impairment or loss of function
      c. Either unresponsive to at least 3 months of conservative nonsurgical care or with severe or rapidly progressive symptoms of motor loss, neurogenic claudication, or cauda equina syndrome

5. Recurrent, same-level disc herniation, at least 3 months after previous disc surgery, when all of the following are present:
   a. Recurrent neurogenic symptoms (radicular pain or claudication) or evidence of nerve root irritation, as demonstrated by a positive nerve root tension sign or positive femoral tension sign or a corresponding neurologic deficit
   b. Impairment or loss of function
   c. Unresponsive to at least 3 months of conservative nonsurgical care or with severe or rapidly progressive symptoms of motor loss, neurogenic claudication, or cauda equina syndrome
   d. Neural structure compression and instability documented by imaging at a level and side corresponding to the clinical symptoms

6. Pseudarthrosis, documented radiologically, when all of the following are present:
   a. No less than 6 months after initial fusion
   b. With persistent axial back pain, with or without neurogenic symptoms, or with severe or rapidly progressive symptoms of motor loss, neurogenic claudication, or cauda equina syndrome
   c. Impairment or loss of function, in a patient who had experienced significant interval relief of prior symptoms

7. Instability due to fracture, dislocation, infection, abscess, or tumor when extensive surgery is required that could create an unstable spine iatrogenic or degenerative flatback syndrome with significant sagittal imbalance; when fusion is performed with spinal osteotomy or interbody spacers

8. Adjacent-level disease when all of the following are present:
   a. Persistent back pain (with or without neurogenic symptoms) with impairment or loss of function that is unresponsive to at least 3 months of conservative therapy
   b. Eccentric disc space collapse, spondylolisthesis, acute single-level scoliosis, or lateral listhesis on imaging
   c. Symptoms and functional measures correlate with imaging findings,
   d. The previous fusion resulted in significant relief for at least 6 months

When a service is considered investigational
Lumbar spinal fusion is considered **investigational** if the sole indication is any one of the following conditions:

- Disc herniation
- Chronic nonspecific low back pain without radiculopathy
- Degenerative disc disease
- Initial discectomy/laminectomy for neural structure decompression
- Facet syndrome

**When a service is considered not medically necessary**

Lumbar spinal fusion is considered **not medically necessary** for any indication not addressed above. Multiple-level lumbar spinal fusion is considered **not medically necessary** when the criteria listed above are not met for all levels.

**Policy Guidelines**

Smoking within the previous 3 months is a contraindication for lumbar spinal fusion. Conservative nonsurgical therapy for the duration specified should include the following:

- Use of prescription strength analgesics for several weeks at a dose sufficient to induce a therapeutic response
- Analgesics should include anti-inflammatory medications with or without adjunctive medications such as nerve membrane stabilizers or muscle relaxants AND
- Participation in at least 6 weeks of physical therapy (including active exercise) or documentation of why the patient could not tolerate physical therapy, AND
- Evaluation and appropriate management of associated cognitive, behavioral, or addiction issues
- Documentation of patient compliance with the preceding criteria.

“Severely restricted functional ability” should generally include loss of function and/or documentation of inability or significantly decreased ability to perform normal daily activities of work, school, or at-home duties.

Persistent debilitating pain is defined as:

- Significant level of pain on a daily basis defined on a visual analog scale as a score greater than 4; AND
- Pain on a daily basis that has a documented impact on activities of daily living despite optimal conservative nonsurgical therapy as outlined above and appropriate for the patient.

**Summary of Evidence**

For individuals who have spinal stenosis undergoing decompressive surgery who receive
lumbar spinal fusion, the evidence includes randomized controlled trials (RCTs). Relevant outcomes are symptoms, functional outcomes, quality of life, resource utilization, and treatment-related morbidity. There are 2 RCTs that compared decompressive surgery plus fusion to decompressive surgery alone. These trials reached different conclusions on the benefit of adding fusion to decompression in patients with low-grade (0%-25% slippage) spondylolisthesis. Both trials reported a larger number of operative and perioperative adverse outcomes with the addition of fusion. The SSS trial found no benefit of surgery on clinical outcomes, while the SLIP trial reported a small benefit in clinical outcomes and a reduction in number of subsequent surgeries when fusion was added to decompression. In the SPORT trial, decompressive surgery plus fusion was compared to conservative, nonsurgical treatment. Ninety-five percent of patients in the surgical group underwent decompression with fusion and had better outcomes than patients receiving nonoperative therapy. This trial, however, did not isolate the impact of fusion apart from that of decompressive surgery. The evidence is insufficient to determine the effects of the technology on health outcomes.

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SUPPLEMENTAL INFORMATION

Clinical Input Received From Physician Specialty Societies and Academic Medical Centers
While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

2014 Input
In response to requests, input was received from 2 academic medical centers and the North American Spine Society, the American Association of Neurological Surgeons and Congress of Neurological Surgeons, with 3 additional reviewers identified through a third physician specialty society. The input addressed specific criteria to determine the medical necessity of lumbar spinal fusion. This input was incorporated into the policy when it was created in 2014.

Practice Guidelines and Position Statements North American Spine Society
In 2014, North American Spine Society (NASS) published coverage policy recommendations for lumbar fusion. Specific criteria were described for infection, tumor, traumatic injuries, deformity (eg, scoliosis), stenosis, disc herniations, synovial facet cysts, discogenic low back pain, and pseudoarthrosis. NASS isolated situations where lumbar fusion would not be indicated: disc herniation in the absence of instability or spondylolisthesis; stenosis in the absence of instability; foraminal stenosis or spondylolisthesis; and discogenic low back pain not meeting the recommended criteria.

The 2007 guidelines from NASS addressed the diagnosis and treatment of degenerative
lumbar spondylolisthesis.2, NASS gave a grade B recommendation for surgical decompression with fusion for the treatment of patients with symptomatic spinal stenosis and degenerative lumbar spondylolisthesis to improve clinical outcomes compared with decompression alone. A grade C recommendation was given for decompression and fusion as a means to provide satisfactory long-term results for the treatment of patients with symptomatic spinal stenosis and degenerative lumbar spondylolisthesis.

The 2011 NASS guidelines (updated in 2013) addressed multidisciplinary spine care for adults with a chief complaint of degenerative lumbar spinal stenosis. The guidelines indicate that the nature of the pain and associated patient characteristics should be more typical of a diagnosis of spinal stenosis than herniated disc. The evidence review addressed whether the addition of lumbar fusion to surgical decompression improved surgical outcomes in the treatment of spinal stenosis compared with treatment by decompression alone. NASS gave a grade B recommendation (fair evidence) for decompression alone for patients with leg predominant symptoms without instability.

The 2012 NASS guidelines (updated in 2014) addressed multidisciplinary spine care for the diagnosis and treatment of lumbar disc herniation with radiculopathy. The guidelines state that “there is insufficient evidence to make a recommendation for or against fusion for specific patient populations with lumbar disc herniation with radiculopathy whose symptoms warrant surgery. Recommendation: I (Insufficient Evidence).”

American Association of Neurological Surgeons and Congress of Neurological Surgeons
The 2014 guidelines from American Association of Neurological Surgeons (AANS) and Congress of Neurological Surgeons (CNS) addressed fusion procedures for the lumbar spine. These guidelines stated that there is no evidence that conflicts with the recommendations formulated in the 2005 guidelines for fusion procedures for the lumbar spine.

- **One- or two-level degenerative disease without stenosis or spondyloolisthesis** (part 7): AANS and CNS recommend that lumbar fusion be performed for patients whose low back pain is refractory to conservative treatment (physical therapy or other nonoperative measures) and is due to 1- or 2-level DDD without stenosis or spondyloolisthesis (grade B, based on multiple level II studies). A grade C recommendation was given that discoblock “(a procedure that involves injecting the disc with an anesthetic agent instead of a contrast agent in an effort to eliminate as opposed to reproducing a patient’s pain)” be considered as a diagnostic option during the evaluation of a patient presenting with chronic low back pain (single level II study), but that the potential for acceleration of the degenerative process be included in the discussion of potential risks (part 6).

- **Disc herniation and radiculopathy** (part 8): Lumbar spinal fusion is not recommended as routine treatment following primary disc excision in patients with a herniated lumbar disc causing radiculopathy (grade C, level IV evidence). Lumbar spinal fusion is recommended as a potential option in
patients with herniated discs who have evidence of significant chronic axial back pain, work as manual laborers, have severe degenerative changes, or have instability associated with radiculopathy caused by herniated lumbar discs (grade C, level IV evidence). Reoperative discectomy combined with fusion is recommended as a treatment option in patients with a recurrent disc herniations associated with lumbar instability or chronic axial low back pain (grade C, level III evidence). Stenosis and spondylolisthesis (part 9): Surgical decompression and fusion is recommended as an effective treatment alternative for symptomatic stenosis associated with degenerative spondylolisthesis in patients who desire surgical treatment (grade B, level II evidence). There was insufficient evidence to recommend a standard fusion technique.

- **Stenosis without spondylolisthesis** (part 10): Surgical decompression is recommended for patients with symptomatic neurogenic claudication due to lumbar stenosis without spondylolisthesis who undergo surgical intervention (grade B, level II/III evidence). In the absence of deformity or instability, lumbar fusion is not recommended because it has not been shown to improve outcomes in patients with isolated stenosis (grade C, level IV evidence).

- AANS and CNS also provided recommendations on:
  - Assessment of functional outcome following lumbar fusion (part 2),
  - Assessment of economic outcome (part 3),
  - Radiographic assessment of fusion status (part 4),
  - Correlation between radiographic outcome and function (part 5),
  - Interbody techniques for lumbar fusion (part 11),
  - Pedicle screw fixation as an adjunct to posterolateral fusion (part 12),
  - Injection therapies (part 13),
  - Brace therapy (part 14),
  - Electrophysiologic monitoring (part 15),
  - Bone growth extenders and substitutes (part 16), and
  - Bone growth stimulators (part 17).

**American College of Occupational and Environmental Medicine**
A 2011 American College of Occupational and Environmental Medicine update of its guidelines on low back disorders stated that for third lumbar discectomy on the same disc, spinal fusion at the time of discectomy as a surgical option is not recommended (inconclusive/insufficient evidence).

**American Pain Society**
- A 2009 clinical practice guideline from the American Pain Society offered the following recommendations:
  - In patients with *nonradicular low back pain* who do not respond to usual, noninterdisciplinary interventions, it is recommended that clinicians consider intensive interdisciplinary rehabilitation with a cognitive/behavioral emphasis (strong recommendation, high-quality evidence)
  - In patients with nonradicular low back pain, common *degenerative spinal changes*, and persistent and disabling symptoms, it is recommended that clinicians discuss risks and benefits of surgery as an option” (weak
recommendation, moderate-quality evidence)

- It is recommended that shared decision making regarding surgery for nonspecific low back pain include a specific discussion about intensive interdisciplinary rehabilitation as a similarly effective option, the small to moderate average benefit from surgery versus noninterdisciplinary nonsurgical therapy, and the fact that the majority of such patients who undergo surgery do not experience an optimal outcome. This recommendation is based on evidence that fusion surgery is superior to nonsurgical therapy without interdisciplinary rehabilitation, but no more effective than intensive interdisciplinary rehabilitation.

- There is insufficient evidence to determine if laminectomy with fusion is more effective than laminectomy without fusion.

Scoliosis Research Society
The Scoliosis Research Society states that the treatment of adolescent idiopathic scoliosis falls into 3 main categories (observation, bracing, surgery) and is based on the risk of curve progression. In general, adolescent idiopathic scoliosis curves progress in 2 ways: (1) during the rapid growth period of the patient and (2) into adulthood if the curves are relatively large. Because scoliosis gets larger during rapid growth, the potential for growth is evaluated taking into consideration the patient's age, whether females have had their first menstrual period, as well as radiographic parameters. The Risser grading system rates a child’s skeletal maturity on a scale of 0 to 5. Patients who are Risser 0 and 1 are growing rapidly, while patients who are 4 and 5 have stopped growing.

“Observation is generally for patients whose curves are less than 25° who are still growing, or for curves less than 50° in patients who have completed their growth.”

“Bracing is for patients with curves that measure between 25° and 40° during their growth phase. The goal of the brace is to prevent the curve from getting bigger.”

“Surgical treatment is used for patients whose curves are greater than 45° while still growing or greater than 50° when growth has stopped. The goal of surgical treatment is two-fold: First, to prevent curve progression and secondly to obtain some curve correction.... Implants are used to correct the spine and hold it in the corrected position until the spine segments which have been operated on are fused as one bone.”

“Alternative treatments to prevent curve progression or prevent further curve progression such as chiropractic medicine, physical therapy, yoga, etc. have not demonstrated any scientific value in the treatment of scoliosis.”

American Academy of Orthopaedic Surgeons
Information updated in 2010 from the American Academy of Orthopaedic Surgeons indicates that the type of treatment required for idiopathic scoliosis in children and adolescents depends on the kind and degree of the curve, child's age, and number of
remaining growth years until the child reaches skeletal maturity.

- Observation is appropriate when the curve is mild (<25°) or if the child is near skeletal maturity.
- The goal of bracing is to prevent scoliotic curves from worsening. Bracing can be effective if the child is still growing and has a spinal curvature between 25° and 45°. There are several types of braces, most being the underarm type.
- Surgery may be recommended if the curve is greater than 45° and the child is still growing. If the patient has reached skeletal maturity, surgery may still be recommended for scoliotic curves that exceed 50° and 55°. An implant made up of rods, hooks, screws, and/or wires is used to straighten the spine. Bone graft from the bone bank, or from the patient’s hip region, is also used to help the operated portion of the spine heal solid.
- At present, the main research focus in idiopathic scoliosis is investigation into genetic factors as a cause of scoliosis.

National Institute of Arthritis and Musculoskeletal and Skin Diseases
The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) in 2012 indicated that many children who are sent to a physician by a school scoliosis screening program “have very mild spinal curves that do not need treatment.” When treatment is needed, an orthopedic spine specialist will suggest the best treatment for each patient based on the “patient’s age, how much more he or she is likely to grow, degree and pattern of the curve, and the type of scoliosis.”

- Observation may be advised if the patient “is still growing (is skeletally immature) and the curve is mild.”
- Doctors may advise patients “to wear a brace to stop a curve from getting any worse in patients who are still growing with moderate spinal curvature. As a child nears the end of growth, the indications for bracing will depend on how the curve affects the child’s appearance, whether the curve is getting worse, and the size of the curve.”
- Surgery may be advised “to correct a curve or stop it from worsening when the patient is still growing, has a curve that is severe (>45° is worsening.”

NIAMS also stated that studies of the following treatments have not demonstrated prevention of curve progression or worsening:

- Chiropractic manipulation
- Electrical stimulation
- Dietary supplements
- Exercise.

National Institute for Health and Clinical Excellence
In 2009, the U.K.’s National Institute for Health and Clinical Excellence (NICE) provided clinical guidelines on early management of persistent nonspecific low back pain. This guidance is currently in update. NICE recommended that practitioners consider referral for spinal fusion for people who: have completed an optimal package of care that
includes a combined physical and psychological treatment program and still have severe nonspecific low back pain for which they would consider surgery.

Reference Resources


43. Blue Cross and Blue Shield Association medical policy manual, policy number: 7.01.141. Last reviewed: May 2016.

Document Precedence

Blue Cross and Blue Shield of Vermont (BCBSVT) Medical Policies are developed to provide clinical guidance and are based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. The applicable group/individual contract and member certificate language, or employer’s benefit plan if an ASO group, determines benefits that are in effect at the time of service. Since medical practices and knowledge are constantly evolving, BCBSVT reserves the right to review and revise its medical policies periodically. To the extent that there may be any conflict between medical policy and contract/employer benefit plan language, the member’s contract/employer benefit plan language takes precedence.

Audit Information

BCBSVT reserves the right to conduct audits on any provider and/or facility to ensure compliance with the guidelines stated in the medical policy. If an audit identifies instances of non-compliance with this medical policy, BCBSVT reserves the right to recoup all non-compliant payments.

Administrative and Contractual Guidance

Benefit Determination Guidance

Prior approval is required and benefits are subject to all terms, limitations and conditions of the subscriber contract.

Incomplete authorization requests may result in a delay of decision pending submission of missing information. To be considered compete, see policy guidelines above.
An approved referral authorization for members of the New England Health Plan (NEHP) is required. A prior approval for Access Blue New England (ABNE) members is required. NEHP/ABNE members may have different benefits for services listed in this policy. To confirm benefits, please contact the customer service department at the member’s health plan.

Federal Employee Program (FEP): Members may have different benefits that apply. For further information please contact FEP customer service or refer to the FEP Service Benefit Plan Brochure. It is important to verify the member’s benefits prior to providing the service to determine if benefits are available or if there is a specific exclusion in the member’s benefit.

Coverage varies according to the member’s group or individual contract. Not all groups are required to follow the Vermont legislative mandates. Member Contract language takes precedence over medical policy when there is a conflict.

If the member receives benefits through an Administrative Services Only (ASO) group, benefits may vary or not apply. To verify benefit information, please refer to the member’s employer benefit plan documents or contact the customer service department. Language in the employer benefit plan documents takes precedence over medical policy when there is a conflict.

Policy Implementation/Update information

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>12/2016</td>
<td>New policy - Adopted BCBSA policy MPRM 7.01.141, Updated Prior Approval list. Deleted CPT Code 22651 no longer in effect 01/01/2017.</td>
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<tr>
<td>11/2017</td>
<td>Removed codes from medical policy 0195T&amp;0196T the codes remain investigational. Added codes 22853, 22854, 22859 as medically necessary per -New codes were effective 01/01/2018. Added 22867, 22868, 22869, &amp; 22870 as investigational-New codes became effective 01/01/2018. Medical policy statements remain unchanged.</td>
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Eligible providers

Qualified healthcare professionals practicing within the scope of their license(s).

Approved by BCBSVT Medical Directors  Date Approved

Gabrielle Bercy-Roberson, MD, MPH, MBA
Senior Medical Director
Chair, Health & Payment Policy Committee
### Attachment I

The following codes will be considered medically necessary when applicable criteria have been met.

<table>
<thead>
<tr>
<th>Code Type</th>
<th>Number</th>
<th>Brief Description</th>
<th>Policy Instructions</th>
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<tbody>
<tr>
<td>CPT®</td>
<td>20930</td>
<td>Allograft, morselized, or placement of osteopromotive material, for spine surgery only (List separately in addition to code for primary procedure)</td>
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<tr>
<td>CPT®</td>
<td>20931</td>
<td>Allograft, structural, for spine surgery only (List separately in addition to code for primary procedure)</td>
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<td>CPT®</td>
<td>20936</td>
<td>Autograft for spine surgery only (includes harvesting the graft); local (eg, ribs, spinous process, or laminar fragments) obtained from same incision (List separately in addition to code for primary procedure)</td>
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<td>CPT®</td>
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<tr>
<td>CPT®</td>
<td>20938</td>
<td>Autograft for spine surgery only (includes harvesting the graft); structural, bicortical or tricortical (through separate skin or fascial incision) (List separately in addition to code for primary procedure)</td>
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<td>CPT®</td>
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<td>Arthrodesis, lateral extracavitary technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22558</td>
<td>Arthrodesis, anterior interbody technique, including minimal discectomy to prepare interspace (other than for decompression); lumbar</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22585</td>
<td>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)</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22586</td>
<td>Arthrodesis, pre-sacral interbody technique, including disc space preparation, discectomy, with posterior instrumentation, with image guidance, includes bone graft when performed, L5-S1 interspace</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22612</td>
<td>Arthrodesis, posterior or posterolateral technique, single level; lumbar (with lateral transverse technique, when performed)</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22614</td>
<td>Arthrodesis, posterior or posterolateral technique, single level; each additional vertebral segment (List separately in addition to code for primary procedure)</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22630</td>
<td>Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace; lumbar</td>
<td>Requires PA</td>
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<td>CPT®</td>
<td>22632</td>
<td>Arthrodesis, posterior interbody technique, including laminectomy and/or discectomy to prepare interspace (other than for decompression), single interspace; each additional interspace (List separately in addition to code for primary procedure)</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22633</td>
<td>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 and segment; lumbar</td>
<td>Requires PA</td>
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<tr>
<td>CPT®</td>
<td>22634</td>
<td>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 and segment; each additional interspace and segment (List separately in addition to code for primary procedure)</td>
<td>Requires PA</td>
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<td>CPT®</td>
<td>22800</td>
<td>Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments</td>
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<tr>
<td>CPT®</td>
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<td>Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments</td>
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<td>CPT®</td>
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<td>CPT®</td>
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<td>Arthrodesis, anterior, for spinal deformity, with or without cast; 2 to 3 vertebral segments</td>
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<td>CPT®</td>
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<td>Arthrodesis, anterior, for spinal deformity, with or without cast; 4 to 7 vertebral segments</td>
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<td>CPT®</td>
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<td>Arthrodesis, anterior, for spinal deformity, with or without cast; 8 or more vertebral segments</td>
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<td>CPT®</td>
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<td>Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); single or 2 segments</td>
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<tr>
<td>CPT®</td>
<td>22819</td>
<td>Kyphectomy, circumferential exposure of spine and resection of vertebral segment(s) (including body and posterior elements); 3 or more segments</td>
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<tr>
<td>CPT®</td>
<td>Code</td>
<td>Description</td>
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<td>22840</td>
<td>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)</td>
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<td>22841</td>
<td>Internal spinal fixation by wiring of spinous processes (List separately in addition to code for primary procedure)</td>
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<td>22842</td>
<td>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)</td>
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<tr>
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<td>22843</td>
<td>Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 7 to 12 vertebral segments (List separately in addition to code for primary procedure)</td>
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<tr>
<td></td>
<td>22844</td>
<td>Posterior segmental instrumentation (eg, pedicle fixation, dual rods with multiple hooks and sublaminar wires); 13 or more vertebral segments (List separately in addition to code for primary procedure)</td>
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<td></td>
<td>22845</td>
<td>Anterior instrumentation; 2 to 3 vertebral segments (List separately in addition to code for primary procedure)</td>
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<tr>
<td>CPT®</td>
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<td>Anterior instrumentation; 4 to 7 vertebral segments (List separately in addition to code for primary procedure)</td>
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<tr>
<td>CPT®</td>
<td>22847</td>
<td>Anterior instrumentation; 8 or more vertebral segments (List separately in addition to code for primary procedure)</td>
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<td>CPT®</td>
<td>22853</td>
<td>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)</td>
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<tr>
<td>CPT®</td>
<td>22854</td>
<td>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)</td>
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<tr>
<td>CPT®</td>
<td>22859</td>
<td>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)</td>
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**The Following Codes Will be Denied as Investigational**

<table>
<thead>
<tr>
<th>CPT®</th>
<th>22867</th>
<th>Insertion of interlaminar/interspinous process stabilization/distraction device, without fusion, including image guidance when performed, with open decompression, lumbar; single level</th>
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<tbody>
<tr>
<td>CPT®</td>
<td>22868</td>
<td>Insertion of interlaminar/interspinous process stabilization/distraction device, without fusion, including image guidance when performed, with open decompression, lumbar; second level (List separately in addition to code for primary procedure)</td>
</tr>
<tr>
<td>CPT®</td>
<td>22869</td>
<td>Insertion of interlaminar/interspinous process stabilization/distraction device, without open decompression or fusion, including image guidance when performed, lumbar; single level</td>
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</table>
APPENDIX

Procedures used for lumbar interbody fusion differ primarily in the direction of approach to the spine, ie, from the front (anterior), from the back (posterior or transforaminal), or from the side (lateral). An alternative approach to interbody fusion is arthrodesis of the transverse processes alone (posterolateral), which does not fuse the adjoining vertebral bodies. Circumferential fusion fuses both the adjacent vertebral bodies and the transverse processes, typically using both an anterior and posterior approach to the spine. See Appendix Table 1 for various approaches.

### Appendix Table 1
Open and Minimally Invasive Approaches to Lumber Interbody Fusion

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Access</th>
<th>Approach</th>
<th>Visualization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior Lumbar interbody fusion</td>
<td>Open, MI, or laparoscopic</td>
<td>Transperitoneal or retroperitoneal</td>
<td>Direct, endoscopic or laparoscopic with fluoroscopic guidance</td>
</tr>
<tr>
<td>Posterior lumbar interbody fusion</td>
<td>Open or MI</td>
<td>Incision centered over spine with laminectomy/laminotomy and retraction of nerve</td>
<td>Direct, endoscopic or microscopic, with fluoroscopic guidance</td>
</tr>
<tr>
<td>Transforaminal lumbar interbody</td>
<td>Open or MI</td>
<td>Offset from spine, through the intervertebral</td>
<td>Direct, endoscopic or microscopic, with fluoroscopic guidance</td>
</tr>
<tr>
<td>Lateral interbody fusion</td>
<td>MI</td>
<td>Retroperitoneal through transpsoas</td>
<td>Direct, with neurologic monitoring and fluoroscopic guidance</td>
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<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Extreme lateral interbody fusion</td>
<td>MI</td>
<td>Direct lateral interbody fusion</td>
<td></td>
</tr>
</tbody>
</table>

MI: minimally invasive

**Anterior Lumbar Interbody Fusion**

Anterior lumbar interbody fusion (ALIF) access provides direct visualization of the disc space, potentially allowing a more complete discectomy and better fusion than lateral or posterior approaches. An anterior approach avoids trauma to the paraspinal musculature, epidural scarring, traction on nerve roots, and dural tears. However, the retraction of the great vessels, peritoneal contents, and superior hypogastric sympathetic plexus with a peritoneal or retroperitoneal approach place these structures at risk of iatrogenic injury. Access to the posterior space for the treatment of nerve compression is also limited. Laparoscopic ALIF has also been investigated.

**Posterior Lumbar Interbody Fusion**

Posterior lumbar interbody fusion (PLIF) can be performed through either a traditional open procedure with a midline incision or a minimally invasive approach using bilateral paramedian incisions. In the open procedure, the midline muscle attachments are divided along the central incision to facilitate wide muscle retraction and laminectomy. In minimally invasive PLIF, tubular retractors may be used to open smaller central bilateral working channels to access the pedicles and foramen.

Minimally invasive PLIF typically involves partial laminotomies and facetectomies. The decompression allows treatment of spinal canal pathology (eg, spinal stenosis, lateral recess and foraminal stenosis, synovial cysts, hypertrophic ligamentum flavum) as well as stabilization of the spine through interbody fusion.

**Transforaminal Lumbar Interbody Fusion**

Transforaminal lumbar interbody fusion (TLIF) is differentiated from the more traditional bilateral PLIF by a unilateral approach to the disc space through the intervertebral foramen. In minimally invasive TLIF, a single incision about 2 to 3 cm in length is made approximately 3 cm lateral to the midline. A tubular retractor is docked on the facet joint complex and a facetectomy with partial laminectomy is performed. Less dural retraction is needed with access through the foramen via unilateral facetectomy, and contralateral scar formation is eliminated. TLIF provides access to the posterior elements along with the intervertebral disc space.

**Lateral Interbody Fusion**

Lateral interbody fusion (eg, extreme lateral interbody fusion or direct lateral interbody fusion) uses specialized retractors in a minimally invasive, lateral approach to the anterior spine through the psoas. Compared with ALIF, the lateral approach does not risk injury to the peritoneum or great vessels. However, exposure to the spine may be more limited, and dissection of the psoas major places the nerves of the lumbar plexus at risk. Electromyographic monitoring and dissection predominantly
within the anterior psoas major may be used to reduce the risk of nerve root injury. These factors decrease the ability to perform a complete discectomy and address pathology of the posterior elements.

**Circumferential Fusion**
Curcumferential fusion is 260° fusion that joins vertebrae by their entire bodies and transverse processes, typically through an anterior and posterior approach.

**Posterolateral Fusion**
Posterolateral fusion is a procedure where the transverse processes of the involved segments are decorticated and covered with a mixture of bone autograft or allograft.