

Policy # 00229

Original Effective Date: 02/20/2008 Current Effective Date: 09/13/2021

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc.(collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Note: Artificial Intervertebral Disc: Lumbar Spine is addressed in medical policy number 00145.

When Services Are Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- Benefits are available in the member's contract/certificate, and
- Medical necessity criteria and guidelines are met.

Based on review of available data, the Company may consider revision or replacement of a cervical disc prosthesis to be **eligible for coverage.****

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- Benefits are available in the member's contract/certificate, and
- Medical necessity criteria and guidelines are met.

Based on review of available data, the Company may consider cervical artificial intervertebral disc replacement (CADR) to be **eligible for coverage.****

Patient Selection Criteria

Coverage eligibility will be considered for cervical artificial intervertebral disc replacement for the following diagnoses and criteria:

• **Radiculopathy** related to nerve root compression caused by one or two-level degenerative disease at all levels from C3-4 through C6-7, with or without neck pain, when **BOTH** of the following criteria are met:

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Policy # 00229

Original Effective Date: 02/20/2008 Current Effective Date: 09/13/2021

- Objective neurologic findings which correlate with a cervical nerve root impingement, and/or unremitting radicular pain which has not responded to at least six (6) weeks of appropriate conservative management (see Policy Guidelines); **AND**
- Imaging studies demonstrating nerve root compression due to herniated disc or spondylotic osteophyte correlating with the distribution of signs and symptoms;
- **Myelopathy** or **myeloradiculopathy** related to central spinal stenosis caused by one or two-level degenerative disease at all levels from C3-4 through C6-7, with or without neck pain, when **BOTH** of the following requirements are met:
 - Clinical signs and symptoms of myelopathy which may include: loss of dexterity, urinary urgency, new-onset bowel or bladder incontinence, frequent falls, hyperreflexia, Hoffmann sign, increased tone or spasticity, gait abnormality or pathologic Babinski sign; AND
 - Imaging studies demonstrating cervical cord compression due to herniated nucleus pulposus or osteophyte formation;
- Additional requirements for CADR (radiculopathy and myelopathy):
 - o The individual is skeletally mature as documented by growth plate closure; AND
 - A U.S. Food and Drug Administration (FDA)-approved cervical artificial intervertebral device is used in accordance with FDA labeling, and will be implanted using an anterior approach; AND
 - o The individual lacks contraindications listed in section below;
- **Simultaneous CADR at two contiguous levels** requires that the above criteria be met for each disc level, and that the device being utilized is FDA-approved for two levels (i.e., Mobi-C^{®‡} or Prestige^{®‡} LP).

Note: This document addresses cervical disc arthroplasty when performed as an elective, non-emergent procedure and not as part of the care of an acute or traumatic event.

Contraindications to CADR are:

- Active systemic infection or infection localized to the site of implantation;
- Osteoporosis defined as dual energy X-ray absorptiometry (DEXA) bone density measured T-score of negative 2.5 or lower;
- Marked cervical instability on neutral resting lateral or flexion/extension radiographs with greater than or equal to 3 mm translation or greater than 11 degrees of angular difference to either adjacent level;

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Policy # 00229

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- Clinically compromised vertebral bodies at the affected level due to current or past trauma, anatomic deformity or cervical spine malignancy;
- Focal kyphosis at the level of planned arthroplasty;
- Moderate or severe spondylosis at the level to be treated, characterized by bridging osteophytes, loss of greater than 50% of normal disc height, or severely limited range of motion (i.e., less than 2 degrees) at the affected level;
- Severe facet joint arthropathy;
- Ossification of the posterior longitudinal ligament (OPLL);
- Sensitivity or allergy to implant materials.

When Services Are Considered Not Medically Necessary

The use of cervical artificial intervertebral disc replacement (CADR) when patient selection criteria are not met is considered to be **not medically necessary.****

Based on review of available data, the Company considers cervical artificial intervertebral disc replacement (CADR) to be **not medically necessary****, including but not limited to the following:

- Cervical total disc arthroplasty at more than two (2) levels or at two (2) non-contiguous levels; OR
- Hybrid constructs in a single procedure, involving cervical fusion with cervical total disc arthroplasty; **OR**
- Cervical total disc arthroplasty in an individual with a previous fusion at another cervical level.

Policy Guidelines

Conservative management should include a combination of strategies to reduce inflammation, alleviate pain, and correct underlying dysfunction, including physical therapy AND at least ONE complementary conservative treatment strategy.

- Physical therapy requirement includes **ANY** of the following:
 - o Physical therapy rendered by a qualified provider of physical therapy services; **OR**
 - Supervised home treatment program that includes ALL of the following:
 - Participation in a patient-specific or tailored program; AND

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- Initial active instruction by MD/DO/PT with redemonstration of patient ability to perform exercises; AND
- Compliance (documented or by clinician attestation on follow-up evaluation);
 OR
- Exception to the physical therapy requirement in unusual circumstances (for instance intractable pain so severe that physical therapy is not possible) when clearly documented in the medical record.
- Complementary conservative treatment requirement includes **ANY** of the following:
 - o Prescription strength anti-inflammatory medications and analgesics; **OR**
 - Adjunctive medications such as nerve membrane stabilizers or muscle relaxants;
 OR
 - Epidural corticosteroid injection(s); OR
 Alternative therapies such as acupuncture, chiropractic manipulation, massage therapy activity modification, and/or a trial period of rest (e.g., from the aggravating/contributing factors) where applicable.

Clinical reevaluation

In most cases, reevaluation should include a physical examination. Direct contact by other methods, such as telephone communication or electronic messaging, may substitute for in-person evaluation when circumstances preclude an office visit.

Failure of conservative management requires ALL of the following:

- Patient has completed a full course of conservative management (as defined above) for the current episode of care; AND
- Worsening of or no significant improvement in signs and/or symptoms upon clinical reevaluation: **AND**
- More invasive forms of therapy are being considered.

Documentation of compliance with a plan of therapy that includes elements from these areas is required where conservative management is appropriate. The requirement for a period of conservative treatment as a prerequisite to a surgical procedure is waived when there is evidence of progressive nerve or spinal cord compression resulting in a significant neurologic deficit, or when myelopathy, weakness, or bladder disturbance is present.

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Policy # 00229

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Reporting of symptom severity – Severity of pain and its impact on activities of daily living (ADLs) and instrumental ADLs (IADLs) is a key factor in determining the need for intervention. For purposes of this guideline, significant pain and functional impairment refers to pain that is at least 3 out of 10 in intensity and is associated with inability to perform at least two (2) ADLs and/or IADLs.

Imaging studies – All imaging must be performed and read by an independent radiologist. If discrepancies should arise in the interpretation of the imaging, the radiologist report will supersede. The results of all imaging studies should correlate with the clinical findings in support of the requested procedure.

Background/Overview

Cervical disc arthroplasty, also known as CADR, was developed as an alternative to cervical fusion for treatment of cervical radiculopathy due to severe degenerative disc disease (DDD).

For appropriately chosen indications, CADR has shown promising results in the available data, indicating at least equivalence to cervical fusion following adequate decompression.

Tobacco cessation – To reduce the risk of pseudoarthrosis, adherence to a tobacco cessation program resulting in abstinence from tobacco for at least 6 weeks prior to spinal surgery is recommended.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

In 2007, the Prestige^{®‡} ST Cervical Disc (Medtronic) was approved by the U.S. Food and Drug Administration (FDA) through the premarket approval process as a class III device. The Prestige ST Cervical Disc is composed of stainless steel and is indicated in skeletally mature patients for reconstruction of the disc from C3 through C7 following single-level discectomy. The device is implanted using an open anterior approach. Intractable radiculopathy and/or myelopathy should be present, with at least 1 of the following items producing symptomatic nerve root and/or spinal cord compression as documented by patient history (eg, pain [neck and/or arm pain], functional deficit, and/or neurologic deficit) and radiographic studies (eg, magnetic resonance imaging, computed tomography, x-rays): herniated disc and/or osteophyte formation. The FDA required Medtronic (the

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Prestige disc manufacturer) to conduct a 7-year postapproval clinical study of the safety and function of the device and a 5 year enhanced surveillance study to more fully characterize adverse events in a broader patient population.

Another disc arthroplasty product, the ProDisc-C^{®‡} (Synthes Spine), was approved by the FDA through the premarket approval process in 2007. As with the Prestige ST Cervical Disc, the FDA approval of ProDisc-C was made conditional on the 7-year follow-up of the 209 subjects included in the non-inferiority trial (discussed in Rationale section), 7-year follow-up of 99 continued-access subjects, and a 5 year enhanced surveillance study to characterize more fully adverse events when the device is used under general conditions of use. The ProDisc C Vivo is currently marketed by Centinal Spine.

More recently, continued FDA approval requires the completion of 2 postapproval studies. One study provides extended follow-up of the premarket pivotal cohort out to 7 years. The second study provides 10-year enhanced surveillance of adverse event data. Continued approval is contingent on the submission of annual reports, which include the number of devices sold, heterotopic ossification, device malfunction, device removal, other serious device-related complications, and analysis of all explanted discs.

In 2019, the M6-C^{TM‡} Artificial Cervical Disc (Spinal Kinetics LLC) was approved by the FDA through the PMA process. The M6-C is indicated for reconstruction of the disc following single level discectomy in skeletally mature patients with intractable degenerative cervical radiculopathy with or without spinal cord compression at one level from C3–C7. Degenerative cervical radiculopathy is defined as arm pain and/or a neurological deficit (numbness, weakness, deep tendon reflexes changes) with or without neck pain due to disc herniation and/or osteophyte formation and confirmed by radiographic imaging (CT, MRI, x-rays). The M6-C Artificial Cervical Disc is implanted via an anterior approach. Patients should have failed at least 6 weeks of conservative treatment or exhibit progressive neurological symptoms which could lead to permanent impairment prior to implantation of the M6-C Artificial Cervical Disc.

Devices with FDA approval for use in the United States are described in Table 1. FDA Product Code: MJO

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Policy # 00229

Original Effective Date: 02/20/2008 Current Effective Date: 09/13/2021

Table 1. Cervical Disc Prostheses Approved for use in the United States

Prosthesis	Manufacturer	Characteristics	FDA Approval	Year
Prestige ^{®‡} ST	Medtronic	Stainless Steel.	P060018	2007
ProDisc-C®‡	Centinal Spine	2 metal (cobalt-chromium alloy) endplates and a polyethylene insert.	P070001	2007
Bryan ^{®‡} Cervical Disc	Medtronic Sofamor Danek	2 titanium-alloy shells encasing a polyurethane nucleus	P060023	2009
PCM [porous- coated motion] Cervical Disc ^{®‡}	NuVasive	PCM ^{®‡} is a semi-constrained device consisting of 2 metal (cobalt-chromium alloy) endplates and a polyethylene insert.	P100012	2012
SECURE®‡-C	Globus Medical	Semi-constrained device with 2 metal (cobalt-chromium molybdenum alloy) endplates and a polyethylene insert.	P100003	2012
Mobi-C®‡	Zimmer Biomet (previously LDR Spine)	Semi-constrained device with metal (cobalt-chromium alloy) endplates and a polyethylene insert. Approved for both 1 and 2- levels.	P110002/P110009	2013
Prestige LP ^{™‡}	Medtronic Sofamor Danek	Titanium-ceramic composite with a metal-on-metal bearing. Approved for both 1- and 2-levels.	P090029	2014/2016
M6 ^{®‡} -C	Orthofix (previously	Ultra-high molecular weight polyethylene weaved fiber	P170036	2019

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Policy # 00229

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	Spinal Kinetics)	creating a matrix (artificial annulus) within a sheath and titanium alloy endplates.		
Simplify ^{®‡} Cervical Artificial Disc	NuVasive (previously Simplify Medical)	PEEK endplates and a mobile ceramic core. MRI compatible.	P200022	2020

FDA: U.S. Food and Drug Administration; MRI: magnetic resonance imaging.

Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. Food and Drug Administration approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, Blue Cross and Blue Shield Association technology assessment program (TEC) and other non-affiliated technology evaluation centers, reference to federal regulations, other plan medical policies, and accredited national guidelines.

References

- 1. AIM Specialty Health, Clinical Appropriateness Guidelines, Musculoskeletal Program, Appropriateness Use Criteria: Spine Surgery, "Cervical Disc Arthroplasty", September 12, 2021.
- 2. Bono CM, Ghiselli G, Gilbert TJ. An evidence-based clinical guideline for the diagnosis and treatment of cervical radiculopathy from degenerative disorders. The spine journal: official journal of the North American Spine Society. 2011;11(1):64-72.
- 3. McAfee PCR, C.; Gilder, K.; Eisermann, L.; Cunningham, B. A meta-analysis of comparative outcomes following cervical arthroplasty or anterior cervical fusion: Results from 4 prospective multicenter randomized clinical trials and up to 1226 patients. Spine. 2012;37(11):943-52.
- 4. Radcliff K, Kepler C, Hilibrand A, et al. Epidural steroid injections are associated with less improvement in patients with lumbarspinal stenosis: a subgroup analysis of the Spine Patient Outcomes Research Trial. Spine. 2013;38(4):279-91.
- 5. Blue Cross and Blue Shield Association, <u>Medical Policy Reference Manual</u>, "Artificial Intervertebral Disc: Cervical Spine", 7.01.108, May 2021.

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Policy # 00229

Original Effective Date: 02/20/2008 Current Effective Date: 09/13/2021

6. U.S. Food and Drug Administration (FDA), M6-Artificial Cervical Disc, Premarket Approval February 6, 2019; https://www.accessdata.fda.gov/cdrh_docs/pdf17/p170036a.pdf

Policy History

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Original Effecti	ve Date: 02/20/2008
Current Effective	ve Date: 09/13/2021
02/13/2008	Medical Director review
02/20/2008	Medical Policy Committee approval.
02/04/2009	Medical Director review
02/19/2009	Medical Policy Committee approval. No change to coverage.
02/04/2009	Medical Policy Committee review
02/17/2009	Medical Policy Implementation Committee approval. No change to coverage.
02/03/2011	Medical Policy Committee review
02/16/2011	Medical Policy Implementation Committee approval. No change to coverage.
02/02/2012	Medical Policy Committee review
02/15/2012	Medical Policy Implementation Committee approval. No change to coverage.
02/07/2013	Medical Policy Committee review
02/20/2013	Medical Policy Implementation Committee approval. Coverage changed from
	investigational to eligible with criteria.
12/12/2013	Medical Policy Committee review
12/18/2013	Medical Policy Implementation Committee approval." Criteria revised to include
	two contiguous levels from C3 to C7 as eligible for coverage. FDA information
	updated.
03/05/2015	Medical Policy Committee review
03/20/2015	Medical Policy Implementation Committee approval. No change to coverage.
08/03/2015	Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section
	removed.
03/03/2016	Medical Policy Committee review
03/16/2016	Medical Policy Implementation Committee approval. Coverage eligibility
	unchanged.
12/01/2016	Medical Policy Committee review

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Policy # 00229

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Current Effecti	ve Date. 07/13/2021
12/21/2016	Medical Policy Implementation Committee approval. Revised existing criteria and coverage statements, added new statement for subsequent disc implantation. New investigational statement added.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
07/06/2017	Medical Policy Committee review
07/19/2017	•
07/19/2017	Medical Policy Implementation Committee approval. Changed the coverage section to adopt AIM guidelines.
07/05/2018	Medical Policy Committee review
07/11/2018	Medical Policy Implementation Committee approval. Coverage eligibility
	unchanged.
09/05/2019	Medical Policy Committee review
09/11/2019	Medical Policy Implementation Committee approval. Coverage eligibility
	unchanged.
04/02/2020	Medical Policy Committee review
04/08/2020	Medical Policy Implementation Committee approval. Replaced the investigational
	coverage with not medically necessary coverage to track AIM Guidelines
	Exclusions section. Updated the Conservative management information and moved
	it from the Background/Overview section to the Policy Guidelines section to track
	AIM Guidelines. Added Tobacco cessation information to the
	Background/Overview section to track AIM Guidelines. "This document addresses
	cervical disc arthroplasty when performed as an elective , non-emergent procedure
	and not as part of the care of an acute or traumatic event" was moved from the
	Background/Overview section as a <i>Note</i> in the coverage section after the Patient
	Selection Criteria.
04/01/2021	Medical Policy Committee review
04/14/2021	Medical Policy Implementation Committee approval. Coverage eligibility
	unchanged.
08/05/2021	Medical Policy Committee review

Next Scheduled Review Date: 08/2022

08/11/2021

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prosthesis. Policy Guidelines revised to track AIM Guidelines.

Medical Policy Implementation Committee approval. Added a "When Services Are

Eligible for Coverage" section for revision or replacement of a cervical disc

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Policy # 00229

Original Effective Date: 02/20/2008 Current Effective Date: 09/13/2021

Coding

The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2020 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

The responsibility for the content of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines is with Blue Cross and Blue Shield of Louisiana and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.

CPT is a registered trademark of the American Medical Association.

Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	0095T, 0098T, 22856, 22858, 22861, 22864, 22899
HCPCS	No codes
ICD-10 Diagnosis	All related diagnoses

^{**}Medically Necessary (or "Medical Necessity") - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment,

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Policy # 00229

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would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

- A. In accordance with nationally accepted standards of medical practice;
- B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and
- C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, "nationally accepted standards of medical practice" means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

‡ Indicated trademarks are the registered trademarks of their respective owners.

NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

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