Blue Cross and Blue Shield of Kansas City (Blue KC) will not provide coverage for manipulation under anesthesia. This is considered investigational.

When Policy Topic is covered
Not applicable.

When Policy Topic is not covered
Spinal manipulation (and manipulation of other joints, e.g., hip joint, performed during the procedure) under anesthesia, spinal manipulation under joint anesthesia, and spinal manipulation after epidural anesthesia and corticosteroid injection are considered investigational for treatment of chronic spinal (cranial, cervical, thoracic, lumbar) pain and chronic sacroiliac and pelvic pain.

Spinal manipulation and manipulation of other joints under anesthesia involving serial treatment sessions is considered investigational.

Manipulation under anesthesia involving multiple body joints is considered investigational for treatment of chronic pain.

Note: This policy statement does not address manipulation under anesthesia for fractures, completely dislocated joints, adhesive capsulitis (e.g., frozen shoulder), and/or fibrosis of a joint that may occur following total joint replacement.

Considerations
In the absence of a vertebral fracture or dislocation, spinal manipulation under anesthesia is considered investigational, regardless of whether it is administered by a physician (i.e., MD or osteopath), chiropractor, physical therapist, or other health provider.

Dislocation versus Subluxation
Spinal manipulation under anesthesia is frequently performed for chronic low back pain related to subluxation, considered investigational, according to the above policy; therefore, a distinction must be made between subluxation and dislocation. According to the chiropractic literature, a subluxation can be defined as a
restriction or loss of normal range of motion of the joint causing dysfunction of the spinal motion segment or peripheral joints. A dislocation can be defined as a disruption in the joint integrity. Typically, a subluxation cannot be detected with imaging studies, while a dislocation can.

### Description of Procedure or Service

<table>
<thead>
<tr>
<th>Populations</th>
<th>Interventions</th>
<th>Comparators</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals:</td>
<td>Interventions of interest are:</td>
<td>Comparators of interest are:</td>
<td>Relevant outcomes include:</td>
</tr>
<tr>
<td>• With chronic spinal, sacroiliac, or pelvic pain</td>
<td>• Manipulation under anesthesia</td>
<td>• Conservative management</td>
<td>• Symptoms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Functional outcomes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Quality of life</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Treatment-related morbidity</td>
</tr>
</tbody>
</table>

Manipulation under anesthesia (MUA) consists of a series of mobilization, stretching, and traction procedures performed while the patient receives anesthesia (usually general anesthesia or moderate sedation).

For individuals who have chronic spinal, sacroiliac, or pelvic pain who receive MUA, the evidence includes case series and nonrandomized comparative studies. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Scientific evidence on spinal MUA, spinal manipulation with joint anesthesia, and spinal manipulation after epidural anesthesia and corticosteroid injection is very limited. No randomized controlled trials have been identified. Evidence on the efficacy of MUA over several sessions or for multiple joints is also lacking. The evidence is insufficient to determine the effects of the technology on health outcomes.

### Background

Manipulation is intended to break up fibrous and scar tissue to relieve pain and improve range of motion. Anesthesia or sedation is used to reduce pain, spasm, and reflex muscle guarding that may interfere with the delivery of therapies and to allow the therapist to break up joint and soft-tissue adhesions with less force than would be required to overcome patient resistance or apprehension. MUA is generally performed with an anesthesiologist in attendance. MUA is an accepted treatment for isolated joint conditions, such as arthrofibrosis of the knee and adhesive capsulitis. It is also used to treat (reduce) fractures (e.g., vertebral, long bones) and dislocations.

MUA has been proposed as a treatment modality for acute and chronic pain conditions, particularly of the spinal region, when standard care, including manipulation, and other conservative measures have been unsuccessful. MUA of the spine has been used in various forms since the 1930s. Complications from general anesthesia and forceful long-lever, high-amplitude nonspecific manipulation procedures resulted in decreased use of the procedure in favor of other therapies. MUA was modified and revived in the 1990s. This revival is attributed to increased interest in spinal manipulative therapy and the advent of safer, shorter-acting anesthesia agents used for conscious sedation.
MUA of the spine is described as follows: after sedation is achieved, a series of mobilization, stretching, and traction procedures to the spine and lower extremities is performed and may include passive stretching of the gluteal and hamstring muscles with straight-leg raise, hip capsule stretching and mobilization, lumbosacral traction, and stretching of the lateral abdominal and paraspinal muscles. After the stretching and traction procedures, spinal manipulative therapy (SMT) is delivered with high-velocity, short-amplitude thrust applied to a spinous process by hand while the upper torso and lower extremities are stabilized. SMT may also be applied to the thoracolumbar or cervical area if considered necessary to address the low back pain.

MUA takes 15–20 minutes, and after recovery from anesthesia, the patient is discharged with instructions to remain active and use heat or ice for short-term analgesic control. Some practitioners recommend performing the procedure on 3 or more consecutive days for best results. Care after MUA may include 4–8 weeks of active rehabilitation with manual therapy, including SMT and other modalities. Manipulation has also been performed after injection of local anesthetic into lumbar zygapophyseal and/or sacroiliac joints under fluoroscopic guidance (MUJA) and after epidural injection of corticosteroid and local anesthetic (MUESI). (1) Spinal manipulation under anesthesia has also been combined with other joint manipulation during multiple sessions. Together, these may be referred to as medicine-assisted manipulation.

**Rationale**

Manipulative procedures are not subject to regulation by the U.S. Food and Drug Administration.

The evidence review was created based on an initial literature search in May 2002 and has been updated periodically using the MEDLINE database. The most recent update with literature review was performed through July 11, 2016.

Assessment of efficacy for therapeutic interventions involves a determination of whether the intervention improves health outcomes. The optimal study design for a therapeutic intervention is a randomized controlled trial (RCT) that includes clinically relevant measures of health outcomes. Randomized, placebo-controlled trials are considered particularly important when assessing treatment of low back pain, to control not only for the expected placebo effect but to also control for the variable natural history of low back and pelvic pain, which may resolve with conservative treatment alone. Dagenais et al, in a 2008 comprehensive review of the history of manipulation under anesthesia (MUA) or medicine-assisted manipulation (MAM) and the published experimental literature, noted that there is no research to confirm theories about a mechanism of action for these procedures and that the only RCT identified was published in 1971 when the techniques for spinal manipulation differed from those used presently. (1)

No high-quality RCTs have been identified. A 2013 comprehensive review of the literature(2) described studies by Kohlbeck et al (2005) and Palmieri and Smoyak.
(2002, described next) as being the best evidence available for MAM/MUA of the spine. Kohlbeck et al reported a nonrandomized comparative study that included 68 patients with chronic low back pain. All patients received an initial 4- to 6-week trial of spinal manipulation therapy (SMT), after which 42 patients received supplemental intervention with MUA and 26 continued with SMT. Low back pain and disability measures favored the MUA group over the SMT-only group at 3 months (adjusted mean difference on a 100-point scale, 4.4 points; 95% confidence interval [CI], -2.2 to 11.0). This difference attenuated at 1 year (adjusted mean difference, 0.3 points; 95% CI, -8.6 to 9.2). The relative odds of experiencing a 10-point improvement in pain and disability favored the MUA group at 3 months (odds ratio [OR], 4.1; 95% CI, 1.3 to 13.6) and at 1 year (OR=1.9; 95% CI, 0.6 to 6.5).

Palmieri and Smoyak evaluated the efficacy of self-reported questionnaires to study MUA in a convenience sample of 87 subjects from 2 ambulatory surgery centers and 2 chiropractic clinics. Thirty-eight patients with low back pain received MUA and 49 received traditional chiropractic treatment. A numeric pain scale and Roland-Morris Disability Questionnaire (RMDQ) were administered at baseline, after the procedure, and 4 weeks later. Average pain scale scores in the MUA group decreased by 50% versus 26% in the traditional treatment group; RMDQ scores decreased by 51% and 38%, respectively. Although the authors concluded that the study supports the need for large-scale studies on MUA and that the assessments are easily administered and dependable, no large-scale studies comparing MUA to traditional chiropractic treatment have been identified.

In 2014, Peterson et al reported a prospective study of 30 patients with chronic pain (17 low back, 13 neck) who underwent a single MUA session with follow-up at 2 and 4 weeks. The primary outcome measure was the Patient’s Global Impression of Change. At 2 weeks, 52% of the patients reported clinically relevant improvement (better or much better), with 45.5% improved at 4 weeks. There was a statistically significant reduction in numeric rating scale (NRS) scores at 4 weeks (p=0.01), from a mean baseline score of 4.0 to 3.5 at 2 weeks post-MUA. Bournemouth Questionnaire (BQ) scores improved from 24.17 to 20.38 at 2 (p=0.008) and to 19.45 at 4 weeks (p=0.001). This study lacked a sham group to control for a potential placebo effect. In addition, the clinical significance of improved NRS and BQ scores is unclear.

In 1999, West et al reported on a series of 177 patients with pain arising from the cranial, cervical, thoracic, and lumbar spine, as well as the sacroiliac and pelvic regions who had failed conservative and surgical treatment. Patients underwent 3 sequential manipulations with intravenous sedation followed by 4 to 6 weeks of spinal manipulation and therapeutic modalities; all had 6 months of follow-up. On average, visual analog scale ratings improved by 62% in patients with cervical pain and by 60% in patients with lumbar pain. Dougherty et al retrospectively reviewed outcomes of 20 cervical and 60 lumbar radiculopathy patients who underwent spinal manipulation postepidural injection. After epidural injection of lidocaine (guided fluoroscopically or with computed tomography), methylprednisolone acetate flexion distraction mobilization and then high-velocity,
low-amplitude spinal manipulation were delivered to the affected spinal regions. Outcome criteria were empirically defined as significant improvement, temporary improvement, or no change. Among lumbar spine patients, 22 (37%) noted significant improvement, 25 (42%) reported temporary improvement, and 13 (22%) no change. Among patients receiving cervical epidural injection, 10 (50%) had significant improvement, 6 (30%) had temporary relief, and 4 (20%) had no change.

The only study of manipulation under joint anesthesia/analgesia (MUJA) found had 4 subjects. Later, Michaelsen noted in a 2000 article that MUJA should be viewed with “guarded optimism because its success is based solely on anecdotal experience.”

Ongoing and Unpublished Clinical Trials
A search of ClinicalTrials.gov in July 2016 did not identify any ongoing or unpublished trials that would likely influence this review.

Summary of Evidence
For individuals who have chronic spinal, sacroiliac, or pelvic pain who receive manipulation under anesthesia (MUA), the evidence includes case series and nonrandomized comparative studies. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Scientific evidence on spinal MUA, spinal manipulation with joint anesthesia, and spinal manipulation after epidural anesthesia and corticosteroid injection is very limited. No randomized controlled trials have been identified. Evidence on the efficacy of MUA over several sessions or for multiple joints is also lacking. The evidence is insufficient to determine the effects of the technology on health outcomes.

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.

In response to requests, input was received from 2 physician specialty societies and 4 academic medical centers while this policy was under review in 2009. Input from the 7 reviewers agreed that MUA for chronic spinal and pelvic pain is investigational.

Practice Guidelines and Position Statements

American Association of Manipulation Under Anesthesia Providers
In 2014, the American Association of Manipulation Under Anesthesia Providers published by consensus-based guidelines for the practice and performance of
MUA.(10) The guidelines include patient selection criteria, establishing medical necessity, frequency and follow-up procedures, parameters for determining MUA progress, general post-MUA therapy, and safety. The guidelines recommend 3 consecutive days of treatment, based on the premise that serial procedures allow a gentler yet effective treatment plan with better control of biomechanical force. The guidelines also recommend follow-up therapy without anesthesia over 8 weeks after MUA that includes all fibrosis release and manipulative procedures performed during the MUA procedure to help prevent re-adhesion.

**American Academy of Osteopathy**
The American Academy of Osteopathy (AAO) published a consensus statement in 2005 on osteopathic manipulation of somatic dysfunction under anesthesia and conscious sedation.(11) AAO stated that MUA “may be appropriate in cases of restrictions and abnormalities of function. These include recurrent muscle spasm, range of motion restrictions, persistent pain secondary to injury and/or repetitive motion trauma.... In general, MUA is limited to patients who have somatic dysfunction which:

1. has failed to respond to conservative treatment in the office or hospital that has included the use of OMT [osteopathic manipulative therapy], physical therapy and medication, and/or
2. is so severe that muscle relaxant medication, anti-inflammatory medication or analgesic medications are of little benefit, and/or
3. results in biomechanical impairment which may be alleviated with use of the procedure.”

**U.S. Preventive Services Task Force Recommendations**
Not applicable.

**Medicare National Coverage**
There is no national coverage determination (NCD). In the absence of an NCD, coverage decisions are left to the discretion of local Medicare carriers.

References:

**Billing Coding/Physician Documentation Information**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>00640</td>
<td>Anesthesia for manipulation of the spine or for closed procedures on the cervical, thoracic or lumbar spine</td>
</tr>
<tr>
<td>22505</td>
<td>Manipulation of spine requiring anesthesia, any region</td>
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</tbody>
</table>

**ICD-10 Codes**

- **M47.011-M47.9** Spondylosis code range
- **M54.00-M54.9** Dorsalgia code range

This policy does not address manipulation under anesthesia for fractures, completely dislocated joints, adhesive capsulitis (eg, frozen shoulder), and/or fibrosis of a joint that may occur following total joint replacement.

CPT code 22505 specifically identifies manipulation of the spine under anesthesia:

22505: Manipulation of spine requiring anesthesia, any region.

Anesthesia administration for spinal manipulation would be coded using:

00640: Anesthesia for manipulation of the spine or for closed procedures on the cervical, thoracic, or lumbar spine

Manipulation under anesthesia CPT codes are available for various joints such as 21073 for the temporomandibular joint(s), 23700 for the shoulder, 27275 for the hip joint, 27570 for the knee joint, 27860 for the ankle, etc.

CPT code 22315 describes closed treatment of vertebral fractures and/or dislocations with or without anesthesia, by manipulation or traction. However, this policy does NOT address the treatment of vertebral fractures or dislocations by manipulation under anesthesia.

**Additional Policy Key Words**

N/A
### Policy Implementation/Update Information

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<th>Date</th>
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<tr>
<td>8/15/07</td>
<td>New policy. This policy was implemented 8/15/2007.</td>
</tr>
<tr>
<td>6/1/08</td>
<td>No policy statement changes.</td>
</tr>
<tr>
<td>6/1/09</td>
<td>Policy statement clarified; remains investigational. Policy title changed to Manipulation Under Anesthesia for the Treatment of Chronic Spinal or Pelvic Pain (previously was: Spinal Manipulation Under Anesthesia)</td>
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<td>6/1/10</td>
<td>No policy statement changes.</td>
</tr>
<tr>
<td>6/1/11</td>
<td>Title changed to “Manipulation under Anesthesia” to include joints other than the spine; statements added that MUA over multiple sessions or for multiple joints is considered investigational.</td>
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<tr>
<td>6/1/12</td>
<td>No policy statement changes.</td>
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</tr>
<tr>
<td>6/1/17</td>
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</tr>
</tbody>
</table>

State and Federal mandates and health plan contract language, including specific provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. The medical policies contained herein are for informational purposes. The medical policies do not constitute medical advice or medical care.Treating health care providers are independent contractors and are neither employees nor agents Blue KC and are solely responsible for diagnosis, treatment and medical advice. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, photocopying, or otherwise, without permission from Blue KC.