Clinical Policy Title: Manipulation under anesthesia (MUA)

Clinical Policy Number: 14.02.10

Effective Date: October 1, 2016
Initial Review Date: July 20, 2016
Most Recent Review Date: July 20, 2016
Next Review Date: July 2017

Related policies:

CP# 15.02.01 Chiropractic care

ABOUT THIS POLICY: Keystone First has developed clinical policies to assist with making coverage determinations. Keystone First's clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered by Keystone First when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Keystone First’s clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Keystone First’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Keystone First will update its clinical policies as necessary. Keystone First’s clinical policies are not guarantees of payment.

Coverage policy

Keystone First considers the use of manipulation under anesthesia (MUA) for the treatment of reducing pain and improving range of motion (ROM) to be clinically proven and, therefore, medically necessary for the following conditions:

1. Arthrofibrosis of knee following total knee arthroplasty, knee surgery, or fracture (see table 1).
2. Chronic, refractory frozen shoulder (adhesive capsulitis [see Table 1]).
3. Reduction of a displaced fracture (e.g., vertebral, long bones).
4. Reduction of acute/traumatic dislocation (e.g., vertebral, perched cervical facet).

Table 1.

<table>
<thead>
<tr>
<th>Knee arthrofibrosis</th>
<th>1. MUA is considered medically necessary arthrofibrosis of knee following total knee arthroplasty, knee surgery, or fracture in persons having less than 90 degrees ROM 4 weeks to 6 months after surgery or trauma.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen shoulder (adhesive capsulitis) MUA is considered</td>
<td>1. Adhesive capsulitis should be documented by</td>
</tr>
</tbody>
</table>
medically necessary for chronic, refractory frozen shoulder (adhesive capsulitis) that meets the following criteria:

1. Restricted active and passive glenohumeral and scapulothoracic motion for at least 1-month duration which has either reached a plateau or worsened.
2. Significant reduction in ROM (at least a 50% reduction in both active and passive ROM compared with the unaffected shoulder).
3. Causing various degrees of impaired function, including limited reaching (e.g., overhead, across the chest) and limited rotation (e.g., unable to scratch the back, difficulty putting on a coat).
4. Persons have undergone at least 12 weeks of conservative management, and have failed to improve, including analgesics or corticosteroids, physical therapy or therapeutic exercises, and subacromial corticosteroid injection or hydrodilatation (arthrographic distension, hydrodilation, hydroplasty).
5. Conventional x-rays do not show bone pathology that can explain the loss of motion.

Limitations:

All other uses of MUA for the treatment of acute or chronic pain conditions, involving one or more of the following joints, is not medically necessary because it is considered experimental, investigational or unproven (this list may not be all inclusive):

- Anesthesia for manipulation of the spine or for closed procedures on the cervical, thoracic or lumbar spine.
- Manipulation of temporomandibular joint(s) (TMJ), therapeutic, requiring an anesthesia service (i.e., general or monitored anesthesia care).
- Manipulation of spine requiring anesthesia, any region.
- Manipulation under anesthesia, shoulder joint, including application of fixation apparatus (dislocation excluded).
- Manipulation, elbow, wrist, finger joint, hip joint under anesthesia.
- Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices).
- Closed treatment of pelvic ring fracture, dislocation, diastasis or subluxation; with manipulation, requiring more than local anesthesia.
- Manipulation of ankle under general anesthesia (includes application of traction or other fixation apparatus).

Limitations per CMS Local coverage determination

- MUA provided for the above indications/conditions consists of a SINGLE treatment session involving an isolated joint. Multiple joint MUAs on the same date of service should be rare. Repeat procedures during the global period would not be expected. (See Utilization Guidelines).
- Only M.D. /D.O. physicians who have training and competency in manipulation should perform this procedure. This procedure must be performed in an outpatient surgery facility or inpatient hospital setting.
Manipulation under anesthesia (MUA) is aimed at reducing pain and improving range of motion and is a treatment modality that consists of manipulation and stretching procedures performed while an individual receives anesthesia (e.g., conscious sedation, general anesthesia). A chiropractor, osteopathic physician or medical physician may perform this type of manipulation with an anesthesiologist in attendance. It is also used for treatment of fractures (e.g., vertebral, long bones) and dislocations. Although there is limited evidence in the peer-reviewed medical literature supporting safety and efficacy for the treatment of pain conditions, MUA has been recommended as a treatment modality for acute and chronic pain conditions, particularly of the spinal region, when standard chiropractic care and other conservative measures have proved unsuccessful.

An individual’s protective reflex mechanism is absent under anesthesia and proponents contend it is less difficult to separate and move the joint when the reflex is absent. During MUA, the chiropractor or physician performs a combination of short manipulations, passive stretches and maneuvers to break up fibrous and scar tissue around the spine and surrounding joint areas. This manipulation typically includes a high velocity thrust (i.e., a technique that adjusts the joints rapidly), which may be followed by a popping or snapping sound.

In a less frequently used technique, manipulation under anesthesia (MUA) may be accompanied by fluoroscopically-guided intra-articular injections with corticosteroid agents to reduce inflammation. This procedure is referred to as manipulation under joint anesthesia/analgesia (MUJA). Manipulation under epidural anesthesia (MUEA) employs an epidural, segmental anesthetic, often with simultaneous...
epidural steroid injections, followed by spinal manipulation therapy. Some therapies may combine manipulation with cortisone injections into paraspinal tissues and proliferant injections. Other forms of manipulation under anesthesia include spinal manipulation under anesthesia (SMUA) performed with or without manipulation of other joints and total body joint manipulation.

MUA is considered safe and effective and is a well-established method of treatment for conditions such as adhesive capsulitis of the shoulder, arthrofibrosis of the knee, and some fractures, dislocations and contractures. When performed for these specific conditions, MUA generally requires a single session of treatment, most often performed unilaterally, involving a single joint. Data supporting the need for, and clinical efficacy of multiple, repeat MUA treatment sessions for these specific conditions, is lacking in the peer-reviewed published medical literature.

Manipulation under anesthesia of adhesive capsulitis, followed by a physical therapy program has been shown to increase ROM and decrease pain (Quraishi et al., J Bone Joint Surg Br 2007; 89: 1197–1200). If one shoulder meets criteria but the condition is bilateral, both shoulders may be manipulated at the same setting.

**Adhesive Capsulitis/Frozen Shoulder:** Adhesive capsulitis, also referred to as frozen shoulder, is used to describe a painful restriction (both passive and active) of shoulder motion in an individual whose radiographs are typically normal. It may also be referred to as pericapsulitis and occurs in approximately 2-5% of the general population. Some authors contend the condition results from synovial inflammation with subsequent reactive capsular fibrosis. Early stages are treated with steroid injections and home therapy. For refractory cases, more aggressive treatment involves manipulation of the shoulder joint under anesthesia or an arthroscopic capsular release (Griffen, 2003). Manipulating the joint under anesthesia breaks up the adhesions surrounding the joint and stretches the fibrotic tissue thereby increasing joint motion and reducing pain. Evidence in the peer-reviewed published scientific literature, including textbook sources, supports MUA is a well-established method of treatment for refractory cases of adhesive capsulitis of the shoulder (Vastamaki, Vastamaki, 2013; Maund, et al., 2012; Mercier, 2007; Kivimaki, et al., 2007; Wang, et al., 2007; Sheridan and Hannafin, 2006; Dias, et al., 2005; Farrell, et al., 2005; Hamdan and Essa, 2003; Nirschl and Willet, 2002). MUA is generally recommended for individuals who do not respond to or who demonstrate little improvement after conservative treatment.

**Postoperative/Post-traumatic Arthrofibrosis of the Knee:** Arthrofibrosis of the knee is a condition that may occur following trauma, surgery or joint replacement and results from inflammation and proliferation of scar tissue. Physiologically, traumatic injury to the knee leads to the formation of internal scar tissue with shrinking and tightening of the joints knee capsule. Tendons outside the joint may also shrink and tighten, leading to a further decrease of joint mobility. Treatment of arthrofibrosis of the knee begins with physical therapy to improve motion, for refractory cases manipulation of the joint under anesthesia may be performed. However in some cases manipulation of the joint inadvertently results in femoral or tibial fracture, depending on the severity of adhesion formation and weak joints. As a result, some surgeons perform an arthroscopic internal resection of scar tissue prior to manipulating the joint in order to reduce the manipulation force and prevent fractures. MUA is
indicated, with or without arthroscopy for arthrofibrosis of the knee, when there is < 90° range of motion following surgery or trauma despite physical therapy (Magit, et al. 2007). Published evidence in the medical literature supports MUA as a well-established safe and effective treatment for arthrofibrosis of the knee (Issa, et al., 2014; Pivec, et al., 2013; Ghani, et al., 2012; Ipach, et al., 2011; Fitzsimmons, et al., 2010; Mohammed, et al., 2009; Keating, et al., 2007; Magit, et al., 2007; Namba and Inacio, 2007; D’Amato and Bach, 2003; Esler, et al. 1999).

Postoperative/Post-traumatic Arthrofibrosis of the Elbow: Arthrofibrosis of the elbow often occurs following injury (e.g., operative, fracture). The elbow becomes stiff as a result of soft-tissue contracture of the ligaments, muscles and/or tendons. Early management generally involves bracing and splints (Araghi, et al, 2010). Manipulation under anesthesia may be recommended when there is failure to progress improve and progress following the use of bracing. Operative release may be considered a treatment option depending on the cause of the contracture, the presence of pain or other symptoms, and decrease in functional level.

Published evidence in the peer reviewed scientific literature supporting the safety and effectiveness of using manipulation under anesthesia of the elbow is limited to retrospective case series, involve small sample populations and lack control groups (Araghi, et al, 2012, Duke, et al., 1991, Davilia, Johnston-Jones, 2006; Tan, et al., 2006; Chao, et al, 2002; Gaur, et al, 2003). Few studies lend support to clinical effectiveness for the treatment of joint stiffness/fibrosis when other conservative measures, such as bracing and splinting, have failed to improve range of motion. In addition, evidence-based clinical practice guidelines supporting MUA for arthrofibrosis of the elbow are not available. There is insufficient evidence in the peer-reviewed published literature and lack of consensus among professional societies to support the effectiveness of MUA as treatment for arthrofibrosis of the elbow.

Fracture and/or Dislocation: MUA is also considered a well-established and successful treatment for some types of fractures (e.g., vertebral, long bones) and acute/traumatic dislocations (e.g., perched cervical facet). It is typically performed with surgical repair and other medically necessary procedures such as arthroscopy. When performed in this context, MUA is considered incidental to the base procedure.

Chronic Contracture of Upper or Lower Extremity Joint: A joint contracture is a limitation in the passive range of motion of a joint. Joint contractures prevent normal movement of the associated body part and can result from a variety of causes such as spasticity or prolonged immobilization. Intra-articular adhesions and peri-articular adhesions, as well as capsular, ligament and muscle shortening and tightness may develop. As a result, activities of daily living and other skills may be adversely affected due to the decreased mobility. In many cases, contractures can be successfully treated non-operatively with aggressive physical therapy or splinting with restoration of functional range of motion. When conservative treatment fails more aggressive treatment may necessary and includes anesthetic block, maximal stretching,
Spine: Theoretically, spinal manipulation as a method of treatment for subluxation stretches the joint capsules and resets the spinal cord and nerve position, allowing the nervous system to function optimally. Evidence in the published, peer-reviewed scientific literature has failed to demonstrate the safety and efficacy of MUA when used for the treatment of pain associated with the spine (SMUA) and some sources indicate the treatment may be hazardous and is obsolete (Kohatsu, 2007; Lindsey, et al., 2003). In addition, anesthesia itself carries a small but clinically significant risk. Overall, the evidence evaluating SMUA consists mainly of case reports, case series, few controlled clinical trials and literature reviews (Peterson, et al., 2014; Taber, et al., 2013; Cremata, et al., 2005; Kohlbeck, et al., 2005; Palmieri and Smoyak, 2002; Kohlbeck and Haldeman, 2002; West, et al., 1999). Some of the study results support improvement in pain and function following SMUA when compared to traditional manipulation (Kohlbeck, et al., 2005; Palmieri and Smoyak, 2002); however these studies are limited by lack of randomization, small sample populations and measurement of short-term outcomes. Follow-up assessments were generally conducted from three months to one year post-MUA treatment, some of which consisted of self-reported outcomes and questionnaires. Patient selection criteria are poorly defined and treatment protocols vary making comparisons difficult. Much of the evidence evaluating SMUA is low quality and reliable conclusions cannot be drawn regarding efficacy and improvement of health outcomes. Further well-designed clinical trials are needed to support the safety and effectiveness of the procedure for the management of acute or chronic pain conditions related to the spine.

Other Joints: Evidence in the medical literature evaluating the use of MUA for management of pain conditions involving one or more (i.e., multiple joints, whole body MUA) of other major joints such as the hip, ankle, toe, elbow, and wrist, is lacking. Due to insufficient evidence, conclusions cannot be made regarding the clinical utility or safety and efficacy of MUA involving other single or multiple joints for pain management.

Searches

Keystone First searched PubMed and the databases of:

- UK National Health Services Centre for Reviews and Dissemination.
- Agency for Healthcare Research and Quality’s National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services (CMS).

We conducted searches on May, 22, 2016. Search terms were: “manipulation under anesthesia (MUA), spinal manipulation under anesthesia, manipulation of a joint under anesthesia.”

We included:

- Systematic reviews, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- Guidelines based on systematic reviews.
- Economic analyses, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

Findings

According to the International Chiropractors Association (ICA), anesthesia is unnecessary and inappropriate for patients who are undergoing chiropractic adjustment since chiropractic manipulations rely on inherent constructive survival mechanisms of the body to achieve the intended corrective effects.

Also according to the American College of Occupational and Environmental Medicine (ACOEM) practice guidelines regarding physical methods of treatment for low back disorders (Hegmann, 2007; update: Hegmann, et al., 2008), due to insufficient evidence manipulation under anesthesia (MUA) and medication-assisted spinal manipulation (MASM) for acute, subacute or chronic low back pain is not recommended.

In a guideline on the diagnosis and treatment of low back pain prepared by the Work Loss Data Institute (WLDI), manipulation under anesthesia is listed as a procedure that was evaluated and that is not recommended.

Evidence in the published scientific literature indicates that joint manipulation under anesthesia is safe and effective for a specific subset of patients with certain orthopedic conditions, such as isolated joint conditions, vertebral fractures or dislocations. While several authors have reported on manipulation under anesthesia (MUA), including spinal manipulation under anesthesia (SMUA) for the treatment of acute and chronic spine- and other related pain conditions, the published, peer-reviewed scientific literature provides insufficient evidence to support its safety and effectiveness.

Policy updates:

Summary of clinical evidence:

<table>
<thead>
<tr>
<th>Citation</th>
<th>Content, Methods, Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buchmann et al. (2005)</td>
<td>Key points:</td>
</tr>
<tr>
<td>Evaluated spinal manipulation under anesthesia.</td>
<td>- In an RCT evaluated spinal manipulation under anesthesia in 26 patients who were assigned to an Active Control Group treated with postisometric relaxation (n=8), an Active Treatment Group that underwent spinal manipulation under anesthesia (n=10), or a Placebo Group that underwent placebo spinal manipulation (n=8).</td>
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<td></td>
<td>- The sole outcome measured was the presence of spinal mobility dysfunctions at baseline, after treatment without anesthesia, after treatment under anesthesia, and within 24 hours after anesthesia. Spinal mobility at the occiput/cervical 1 and cervical 1/cervical 2 junctions was measured manually and independently by two chiropractors. At each assessment, the Placebo Group had 10 to 13 dysfunctions whereas the Active Treatment Group had 21 dysfunctions at baseline and 1 to 2 dysfunctions at all</td>
</tr>
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</table>
These improvements in spinal mobility were statistically significant except at baseline (P<0.005). Compared with the Placebo Group, the Active Control Group also had a statistically significant improvement in spinal mobility after postisometric relaxation treatment before anesthesia but not at the latter two assessments (P<0.001). Although this study provides evidence that cervical spinal mobility improves after chiropractic treatment, patients were not assessed for improvements in pain or disability. Therefore, it is not clear whether the chiropractic treatment provided any clinically significant benefits.

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**Key points**:
- A blinded randomized trial with a 1-year follow-up was performed at 3 referral hospitals. A total of 125 patients with clinically verified frozen shoulder were randomly assigned to the manipulation group (n = 65) or control group (n = 60). Both the intervention group and the control group were instructed in specific therapeutic exercises by physiotherapists.
- Clinical data were gathered at baseline and at 6 weeks and 3, 6, and 12 months after randomization. The 2 groups did not differ at any time of the follow-up in terms of shoulder pain or working ability.
- Small differences in the ROM were detected favoring the manipulation group. Perceived shoulder pain decreased during follow-up equally in the 2 groups, and at 1 year after randomization, only slight pain remained.
- Manipulation under anesthesia does not add effectiveness to an exercise program performed by patients.

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**Key points**:
- A smaller nonrandomized controlled trial15 that evaluated spinal manipulation under conscious sedation. A total of 68 patients who had low back pain for > 3 months were enrolled and, after 4 to 6 weeks of standard spinal manipulation therapy, patients were assigned to 1 to 3 sessions of manipulation under sedation (Sedation Group, n=42) or a Control Group (n=26) based on patient preference.
- Patients in the Control Group underwent an additional 4 to 12 weeks of standard manipulation therapy. At baseline, 3, 6, and 12 months, disability was assessed with a measure that combined scores from the SF-36® Health Survey (Medical Outcomes Trust) questionnaire and Outcomes Data Collection Instruments developed by the American Association of Orthopedic Surgeons in conjunction with other specialty societies.
- Based on the 95% confidence intervals of the mean differences between the Sedation and Control Groups in outcome scores, spinal manipulation under sedation did not provide any statistically significant benefits at 3, 6, or 12 months.

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**Glossary**

**Acute** — Refers to having a rapid onset followed by a short but severe course.

**Adhesions** — Bands of scar-like tissue that forms between two surfaces in the body.

**Adhesive Capsulitis** — Disorder in which a joint capsule becomes inflamed and stiff, with severely restricted movement and significant pain; may occur as a result of an injury and subsequent lack of use due to pain or may also arise spontaneously without an obvious preceding triggering factor; may occur in any joint, though most commonly in the shoulder (frozen shoulder), knee or hip.
Anesthesia — Medication used before or during surgery or a medical procedure that prevents pain from being felt or provides decreased consciousness.

Articular — Pertaining to a joint; specifically, the surfaces of the bones for the joint.

Chiropractic — System of diagnosis and healing based on the concept that health and disease are related to the relationship between the spinal column and the nervous system.

Chronic — Lasting for a long period of time or marked by frequent recurrence.

Dislocated Joint — Separation of two bones where they meet at a joint; may cause ligament or nerve damage.

Doctor of Chiropractic (DC) — Health care provider whose focus is the diagnosis and treatment of mechanical disorders of the spine and musculoskeletal system with the goal of affecting the nervous system and improving health; also referred to as a chiropractor.

Doctor of Osteopathic Medicine (DO) — Physician licensed to perform surgery and prescribe medications; similar to an MD (four years of medical school), but also completes an additional 300 to 500 hours of training about the body’s musculoskeletal system and hands-on manual medicine; they are dedicated to treating and healing the entire individual as a whole, rather than focusing on one system or body part.

Dysfunctional — Abnormal or impaired functioning, especially of a body system.

Fibrous — Scar tissue that develops as a result of an injury.

General Anesthesia — Treatment that puts an individual to “sleep” during medical procedures or surgery so that one cannot feel or remember anything that happens. This “sleep” differs from regular sleep in that the anesthetized brain doesn’t form memories or respond to pain signals.

Kinesthetic — Refers to the mechanics and anatomy in relation to body movement.

Manipulation — Technique used most often in chiropractic therapy to adjust the spine, joints or other tissue, involving application of a directed thrust.

Medically Necessary — A service or benefit is Medically Necessary if it is compensable under the Medical Assistance Program and if it meets any one of the following standards:

- The service or benefit will, or is reasonably expected to, prevent the onset of an illness, condition or disability.
• The service or benefit will, or is reasonably expected to, reduce or ameliorate the physical, mental or developmental effects of an illness, condition, injury or disability.

• The service or benefit will assist the Member to achieve or maintain maximum functional capacity in performing daily activities, taking into account both the functional capacity of the Member and those functional capacities that are appropriate for Members of the same age.

Modalities — Method of treatment; in physical therapy, includes treatments such as ultrasound, TENS unit, therapeutic exercise, etc.

Noninvasive — A medical procedure or exam that does not penetrate the skin or enter the body in any way.

Occupational Therapy — Type of therapy or rehabilitation to assist individuals to improve their ability to perform daily activities; most often is focused on the arms or hands.

Pain Management Program — Surgery, procedure or other treatment (such as medications) designed to reduce chronic pain and help an individual achieve a reasonable quality of life and ability to function.

Passive — Action performed by someone else.

Physical Therapy — Treatment of physical dysfunction or injury by therapeutic exercise and the application of modalities, intended to restore or facilitate normal function or development.

Sedation — Use of medication to calm or relax an individual.

Therapeutic — Pertaining to the treatment of a disease.

Twilight Sedation — Also known as conscious sedation; a light sedation administered for minor surgeries or procedures during which the individual retains airway reflexes and responses to verbal stimuli, but is in a decreased level of awareness.

References

Professional society guidelines/other:


Peer-reviewed references:


Clinical trials:
Searched clinicaltrials.gov on May 20, 2016 using terms manipulation under anesthesia (MUA) | Open Studies. One study found. One relevant.


**CMS National Coverage Determinations (NCDs):**

No NCDs identified as of the writing of this policy.

**Local Coverage Determinations (LCDs):**


**Commonly submitted codes**

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Comments</th>
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<tbody>
<tr>
<td>22315</td>
<td>Closed treatment of vertebral fracture(s) and/or dislocation(s) requiring casting or bracing, with and including casting and or bracing by manipulation or traction.</td>
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<tr>
<td>22505</td>
<td>Manipulation of spine requiring anesthesia, any region</td>
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<tr>
<td>23700</td>
<td>Manipulation under anesthesia, shoulder joint excluding dislocation and including fixation apparatus</td>
<td></td>
</tr>
<tr>
<td>24505</td>
<td>Closed treatment of humeral shaft fracture, with manipulation</td>
<td></td>
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<tr>
<td>25505</td>
<td>Closed treatment of radial shaft fracture, with manipulation</td>
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<td>25535</td>
<td>Closed treatment of ulnar shaft fracture, with manipulation</td>
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<td>27502</td>
<td>Closed treatment of femoral shaft fracture, with manipulation, with or with skeletal traction</td>
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<tr>
<td>27570</td>
<td>Manipulation of knee joint under general anesthesia</td>
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<td>27752</td>
<td>Closed treatment of tibial shaft fracture with or without fibular fracture, with manipulation</td>
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<tr>
<td>27781</td>
<td>Closed treatment of fibula shaft fracture, with manipulation</td>
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<table>
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<td>M24.661</td>
<td>Ankylosis (arthrofibrosis), right knee</td>
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<tr>
<td>M24.669</td>
<td>Ankylosis (arthrofibrosis), unspecified knee</td>
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<td>M75.00</td>
<td>Adhesive capsulitis, unspecified shoulder</td>
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<td>M75.01</td>
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<td>M75.02</td>
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<td>M72.301-</td>
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<td>S12.000-</td>
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<td>S13.101-</td>
<td>Dislocation cervical</td>
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<td>S13.181</td>
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<td>S23.101-</td>
<td>Dislocation thoracic</td>
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<td>S32.059</td>
<td>vertebra</td>
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<td>S33.101-</td>
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<td>S33.141</td>
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