Prior Authorization Review Panel
MCO Policy Submission

A separate copy of this form must accompany each policy submitted for review.
Policies submitted without this form will not be considered for review.

Plan: Keystone First Community Health Choices	**Submission Date**: 7/27/2022
Policy Number: CCP.1245	**Effective Date:** 10/2016 **Revision Date:** July 1, 2022
Policy Name: Manipulation under anesthesia (hip and elbow)	
Type of Submission – Check all that apply: ☐ **New Policy** ☑ **Revised Policy*** ☐ **Annual Review – No Revisions** ☐ **Statewide PDL**	
***All revisions to the policy must be highlighted using track changes throughout the document.** **Please provide any clarifying information for the policy below:** Please see revisions below using tracked changes.	
Name of Authorized Individual (Please type or print): Akintayo Akinlawon, MD	**Signature of Authorized Individual:** 

Keystone First
Community HealthChoices

Manipulation under anesthesia (hip and elbow)

Clinical Policy ID: CCP.1245

Recent review date: 7/2022

Next review date: 11/2023

Policy contains: Elbow joint for arthrofibrosis, hip pain management, manipulation under anesthesia.

Keystone First Community HealthChoices has developed clinical policies to assist with making coverage determinations. Keystone First Community HealthChoices' 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 Community HealthChoices 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 Community HealthChoices' 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 Community HealthChoices' clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Keystone First Community HealthChoices will update its clinical policies as necessary. Keystone First Community HealthChoices' clinical policies are not guarantees of payment.

Coverage policy

Manipulation under anesthesia for elbow and hip conditions is investigational/not clinically proven and, therefore, not medically necessary.

Limitations

No limitations were identified during the writing of this policy.

Alternative covered services

Conservative medical management including:

- Physical therapy.
- Occupational therapy.
- Pain management program.
- Standard chiropractic manipulation.
- Prescription drug therapy.

Background

Manipulation under anesthesia is a non-invasive technique, which combines manual manipulation of a joint or the spine with a general anesthetic, typically Diprivan (Propofol) or Versed. The procedure is aimed at reducing pain and improving range of motion and 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 and operating room nurse in attendance (Gordon, 2014).

The phases for manipulation under anesthesia include sedation, manipulative procedures, and additional stretching and traction. Thereafter, follow-up care occurs seven to 10 days after manipulation, allowing pre-rehabilitation and formal rehabilitation for three to six weeks. Manipulation under anesthesia is most often used for patients refractory to conservative treatment, and cases with the presence of intersegmental and/or global recalcitrant motion restrictions (Gordon, 2014).

Measurement of progress after manipulation under anesthesia includes subjective and objective changes, such as pain index, range of motion, muscle mass, muscle contractility, nerve conduction studies, and radiography results (Gordon, 2014).

Clinicians may perform manipulation under anesthesia for the elbow in post-surgical patients having difficulties in maintaining range of motion, when motion gains are suboptimal and have plateaued (Patiño, 2022).

Manipulation under anesthesia has been proposed for lumbopelvic pain, including after hip surgery, using the same combination of anesthesia/sedation, mobilization/stretching/traction, manipulation, and post-procedural care (Taber, 2014).

Findings

Although guidelines from the American Academy of Manipulation Under Anesthesia Providers were issued 2001, no standards as to when to recommend a patient receive manipulation under anesthesia exist (DiGiorgi, 2018). The American Association of Manipulation Under Anesthesia Providers issued a guideline for providers, including a statement that endorses conditions that fall within “recognized categories of conditions” of manipulation under anesthesia; nine such conditions are included, including those related to the shoulder, knee, and spine, with various citations (Gordon, 2014).

Gordon (2014) further acknowledges lack of unequivocal support for effectiveness from randomized controlled trials and meta-analyses, but lower-level evidence exists. The guideline mentions that evidence is mostly in the form of case series; standards are lacking for patient selection; and standardization are lacking for manipulation under anesthesia procedures and follow up care.

The National Academy of Manipulation Under Anesthesia Physicians issued a document on standard practices for the treatment. Addressed were clinical justifications, guidelines for medical necessity and frequency, progress measures, anesthesia standards, nursing standards, and educational standards (National Academy of Manipulation Under Anesthesia Physicians, 2015).

An American College of Occupational and Environmental Medicine practice guideline on elbow disorders does not mention manipulation under anesthesia as a treatment option (Hegmann, 2013).

Summaries of articles in the professional literature addressing manipulation under anesthesia for elbow and hip conditions are presented here:

Elbow

A review of 45 patients assessed the effects of manipulation under anesthesia for elbow stiffness, given an average of 115 days after surgery or injury. The increase in average flexion arc was 57.9 degrees to 83.7 degrees 10 years after pre-manipulation flexion. Improvement in elbow flexion arc of motion was statistically significant ($P < .001$), with significantly greater average improvements in those who underwent manipulation within three months of surgery/injury, i.e., 38.3 degrees to 3.1 degrees (Spitler, 2018).

A study of 51 persons with stiff elbow given manipulation under anesthesia an average of 40 days after surgery revealed that after 12 months, the average total arc nearly doubled, from 40 degrees to 78 degrees (Araghi, 2010).

A Cochrane review of manipulation under anesthesia for elbow dislocations included two trials. One of these (n = 50) showed better, but statistically insignificant results for manipulation three days post reduction compared with cast immobilization. The second study (n = 30) had similar results – superior, but statistically insignificant. Both studies were methodologically flawed and potentially biased (Taylor, 2012).

Aside from these, only three articles in the literature address post-trauma manipulation under anesthesia of the elbow, using samples of 11 (Duke, 1991), 12 (Ek, 2016), and 12 (Rotman, 2019). Each of these involve adults; one study of pediatric patients (n = 13) showed manipulation under anesthesia to be effective for post-traumatic arthrofibrosis (Rane, 2020). Several others are case studies and are not cited here.

A recent article from the British Elbow and Shoulder Society lists manipulation under anesthesia as one of the acceptable options for post-traumatic elbow stiffness (Zhang, 2020). Another article states that the treatment for a stiff elbow should be used within six months of the injury or surgery (Mellema, 2016).

Hip

Few references addressing manipulation under anesthesia for hip pain, from trauma and other sources, are included in the medical literature. Several early reviews were case studies involving one patient. Another article found that among 37 patients with total hip arthroplasties, none required manipulation under anesthesia, unlike 2 of 78 after total or uni-compartmental knee arthroplasties (Shah, 2018).

A study of 18 patients requiring manipulation under anesthesia examined five types of lumbopelvic pain, including hip pain. Clinically meaningful reduction in low back pain disability was observed in 16 of the 18 patients (Taber, 2014).

In 2022, we updated the references. No policy changes are warranted.

References

On May 23, 2022, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “manipulation under anesthesia,” “elbow,” “hip,” and “manipulation of a joint under anesthesia.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

Araghi A, Celli A, Adams R, Morrey B. The outcome of examination (manipulation) under anesthesia on the stiff elbow after surgical contracture release. *J Shoulder Elbow Surg*. 2010;19(2):202-208. Doi: 10.1016/j.jse.2009.07.060.

DiGiorgi D, Cerf JL, Bowerman DS. Outcomes indicators and a risk classification system for spinal manipulation under anesthesia: A narrative review and proposal. *Chiropr Man Therap*. 2018;26:9. Doi: 10.1186/s12998-018-0177-z. eCollection 2018.

Duke JB, Tessler RH, Dell PC. Manipulation of the stiff elbow with patient under anesthesia. *J Hand Surg Am*. 1991;16(1):19-24. Doi: 10.1016/x0363-5023(10)80005-x.

Ek ET, Paul SK, Hotchkiss RN. Outcomes after operative treatment of elbow contractures in the pediatric and adolescent population. *J Shoulder Elbow Surg*. 2016;25(12):2066-2070. Doi: 10.1016/j.jse.2016.09.008.

Gordon R, Cremata E, Hawk C. Guidelines for the practice and performance of chiropractic and manual therapies. *Chiropr Man Ther*. 2014;22:7. Doi: 10.1186/2045-709X-22-7.

Hegmann KT, Hoffman HE, Belcourt RM, et al. ACOEM practice guidelines: Elbow disorders. *J Occup Environ Med.* 2013;55(11):1365-1374. Doi: 10.1097/JOM.0b013e3182a0d7ec.

Mellema JJ, Lindenhovius AL, Jupiter JB. The posttraumatic stiff elbow: An update. *Curr Rev Musculoskeletr Med*. 2016;9(2):190-198. Doi: 10.1007/s12178-016-9336-9.

National Academy of Manipulation Under Anesthesia Physicians. National Academy of Manipulation Under Anesthesia Physicians National Guidelines. http://muaonline.com/wp-content/uploads/2015/03/National_Guidelines_NAMUA.pdf. Published March, 2015.

Patiño JM, Saenz VP. Stiff Elbow. [Updated 2022 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. https://www.ncbi.nlm.nih.gov/books/NBK459268/. Published January, 2022.

Rane AA, Garcia BN, Wang AA. Closed manipulation under anesthesia for pediatric post-traumatic elbow arthrofibrosis. *J Shoulder Elbow Surg*. 2020;29(2):340-346. Doi: 10.1016/j.jse.2019.10.004.

Rotman D, Factor S, Schermann H, et al. Manipulation under anesthesia for the postsurgical stiff elbow: A case series and review of literature. *Eur J Orthop Surg Traumatol*. 2019;29(8):1679-1685. Doi: 10.1007/s00590-019-02492-6.

Shah RR, Cipparrone NE, Gordon AC, Raab DJ, Bresch JR, Shah NA. Is it safe? Outpatient total joint arthroplasty with discharge to home at a freestanding ambulatory surgical center. *Arthroplast Today*. 2018;4(4):484-487. Doi: 10.1016/j.artd.2018.08.002.

Spitler CA, Doty DH, Johnson MD, et al. Manipulation under anesthesia as a treatment of posttraumatic elbow stiffness. *J Orthop Trauma*. 2018;32(8):e304-e308. Doi: 10.1097/BOT.0000000000001222.

Taber DJ, James GD, Jacon A. Manipulation under anesthesia for lumbopelvic pain: A retrospective review of 18 cases. *J Chiropr Med*. 2014;13(1):28-34. Doi: 10.1016/j.jcm.2014.01.008.

Taylor F, Sims S, Theis JC, Herbison GP. Interventions for treating acute elbow dislocations in adults. *Cochrane Database Syst Rev*. 2012 Apr 18;2012(4):CD007908. Doi: 10.1002/14651858.CD007908.pub2.

Zhang D, Nazarian A, Rodriguez EK. Post-traumatic elbow stiffness: Pathogenesis and current treatments. *Shoulder Elbow*. 2020;12(1):38-45. Doi: 10.1177/1758573218793903.

Policy updates

7/2016: initial review date and clinical policy effective date: 10/2016

7/2017: Policy references updated.

7/2018: Policy references updated.

7/2019: Policy references updated, policy ID changed to CCP.1245.

7/2020: Policy references updated, due to the shift from a broader range of body parts to just hip and elbow.

7/2021: Policy references updated.

7/2022: Policy references updated.