Continuous Passive Motion (CPM)

Policy # 00020
Original Effective Date: 05/26/1993
Current Effective Date: 06/08/2020

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: Dynamic Range of Motion Devices is addressed in medical policy 00193.

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 the use of continuous passive motion (CPM) to be **eligible for coverage**.**

Patient Selection Criteria

The use of continuous passive motion (CPM) will be considered for coverage when all of the following criteria are met:

- Continuous passive motion (CPM) is initiated within the first 48 hours following surgery; and
- Continuous passive motion (CPM) is for one of the following clinical indications:
    - Post-operative rehabilitation following major joint reconstruction and/or revision of the hip, shoulder, elbow, wrist or knee; or
    - Treatment of adhesive capsulitis, or to prevent recurrence.

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers continuous passive motion (CPM) when patient selection criteria are not met to be **investigational.***

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The use of continuous passive motion (CPM) for primary or adjunct therapeutic applications other than those listed in the patient selection criteria is considered **investigational.*** This includes, but is not limited to, use in the ankle, temporomandibular joint (TMJ), toes, treatment of degenerative joint disease or treatment of chronic contractures.

Continuous passive motion (CPM) is considered to be **investigational*** for use longer than 21 days from the date of first application.

Background/Overview

CPM devices are utilized to keep a joint in motion without patient assistance. CPM is being evaluated for treatment and postsurgical rehabilitation of the upper and lower limb joints and for a variety of musculoskeletal conditions.

Physical therapy of joints following surgery focuses both on passive motion to restore mobility and active exercises to restore strength. While passive motion can be administered by a therapist, more commonly, CPM devices are used. CPM is thought to improve recovery by stimulating the healing of articular tissues and circulation of synovial fluid, reduce local edema, and prevent adhesions; joint stiffness or contractures; or cartilage degeneration. CPM has been most thoroughly investigated in the knee, particularly after total knee arthroplasty (TKA) or ligamentous repair, but its acceptance in the knee joint has created interest in extrapolating this experience to other weight-bearing joints (i.e., hip, ankle, metatarsals) and non-weight-bearing joints (i.e., shoulder, elbow, metacarpals, and interphalangeal joints). Use of CPM in stroke and burn patients is also being explored.

The device moves the joint (e.g., flexion/extension), without patient assistance, continuously for extended periods of time, i.e., up to 24 hours/day. An electrical power unit is used to set the variable range of motion (ROM) and speed. The initial settings for ROM are based on a patient's level of comfort and other factors that are assessed intra-operatively. The ROM is increased by three to five degrees per day, as tolerated. The speed and ROM can be varied, depending on joint stability. The use of the devices may be initiated in the immediate postoperative period, and then continued at home for a variable period of time.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

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CPM machines are considered Class II devices and are generally approved through the 510(k) process.

Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. FDA 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.

Supplemental Information

Clinical Input 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.

2016 Input

In response to requests, input was received from 2 physician specialty societies and 1 academic medical center while this policy was under review in 2016. Input considered continuous passive motion (CPM) medically necessary as an adjunct to physical therapy during the non-weight-bearing rehabilitation period following articular cartilage repair procedures of the knee. One reviewer referred to the American Academy of Orthopaedic Surgery (2015) guidelines on the surgical management of osteoarthritis of the knee, which concluded that there was strong evidence that CPM after knee arthroplasty does not improve outcomes.

2010 Input

In response to requests, input was received from 2 physician specialty societies and 5 academic medical centers while this policy was under review in 2010. Overall, input supported the use of CPM under conditions of low postoperative mobility or inability to comply with rehabilitation exercises after total knee arthroplasty or total knee arthroplasty revision or during the non-weight-bearing rehabilitation period following articular cartilage repair procedures of the knee. Support was limited

for use of CPM in joints other than the knee or in situations or conditions other than those described in this evidence review.

2008 Input
In response to requests, input was received from 1 physician specialty society and 2 academic medical centers while this policy was under review in 2008. The three reviewers interpreted the existing literature as supporting the use of CPM for the knee for at least seven days postoperatively, whether in the hospital or home, and suggested that longer use of CPM would be warranted for special conditions.

Practice Guidelines and Position Statements

American Academy of Orthopaedic Surgeons
The AAOS (2015) published evidence-based guidelines on the surgical management of osteoarthritis of the knee. The AAOS identified two high-quality studies and five moderate-quality studies that evaluated the use of CPM. In one high-quality study, CPM was used for about two weeks after discharge. The AAOS concluded that "the combined results provide strong evidence that the surgical outcomes for those who used continuous passive motion are not better than for those who did not use continuous passive motion."

French Physical Medicine and Rehabilitation Society
Clinical practice guidelines from the French Physical Medicine and Rehabilitation Society (2007) concluded that evidence is not sufficient to recommend substituting CPM for other rehabilitation techniques aimed at early mobilization after total knee arthroplasty. The evidence review did not find a positive effect of CPM over intermittent early mobilization, at short- or long-term follow-up.

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

Medicare National Coverage
The Centers for Medicare & Medicaid Services (2005) issued a national coverage determination on durable medical equipment reference, which stated:

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"Continuous passive motion devices are devices covered for patients who have received a total knee replacement. To qualify for coverage, use of the device must commence within 2 days following surgery. In addition, coverage is limited to that portion of the 3-week period following surgery during which the device is used in the patient's home. There is insufficient evidence to justify coverage of these devices for longer periods of time or for other applications."

Ongoing and Unpublished Clinical Trials
Some currently unpublished trials that might influence this review are listed in Table 1.

Table 1. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
Ongoing			
NCT01420887	Preservation of Joint Function Using Postoperative Continuous Passive Motion (CPM): A Pilot Study	50	Dec 2018

NCT: national clinical trial.

References

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16. Leach W, Reid J, Murphy F. Continuous passive motion following total knee replacement: a prospective randomized trial with follow-up to 1 year. Knee Surg Sports Traumatol Arthrosc 2006; 14(10):922-6.
17. Lynch D, Ferraro M, Krol J et al. Continuous passive motion improves shoulder joint integrity following stroke. Clin Rehabil 2005; 19(6):594-9.

Policy History

Original Effective Date: 05/26/1993
Current Effective Date: 06/08/2020
08/16/2001 Medical Policy Committee review

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08/27/2001	Managed Care Advisory Council approval
06/24/2002	Format revision. No substance change to policy.
02/20/2003	Medical Policy Committee review
04/14/2003	Managed Care Advisory Council approval
06/01/2004	Medical Director review
06/15/2004	Medical Policy Committee review
06/28/2004	Managed Care Advisory Council approval
03/01/2005	Medical Director review
03/15/2005	Medical Policy Committee review
04/04/2005	Managed Care Advisory Council approval
04/05/2006	Medical Director review
05/17/2006	Medical Policy Committee approval. Format revision, including addition of FDA and or other governmental regulatory approval and rationale/source. Patient Selection criteria revised to correct redundant criterion. Coverage eligibility unchanged.
05/02/2007	Medical Director review
05/23/2007	Medical Policy Committee approval. Coverage eligibility unchanged. Rationale revised.
06/13/2007	Medical Director review
06/20/2007	Medical Policy Committee approval. Rationale updated. Coverage eligibility unchanged.
10/01/2008	Medical Director review
10/22/2008	Medical Policy Committee approval. No change to coverage eligibility.
10/01/2009	Medical Policy Committee approval
10/14/2009	Medical Policy Implementation Committee approval. No change to coverage eligibility.
10/14/2010	Medical Policy Committee review
10/20/2010	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/06/2011	Medical Policy Committee review
10/19/2011	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
12/06/2012	Medical Policy Committee review

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12/19/2012	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
12/12/2013	Medical Policy Committee review
12/18/2013	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
12/04/2014	Medical Policy Committee review
12/17/2014	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
02/18/2015	Coding update.
12/03/2015	Medical Policy Committee review
12/16/2015	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
12/01/2016	Medical Policy Committee review
12/21/2016	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
12/07/2017	Medical Policy Committee review
12/20/2017	Medical Policy Implementation Committee approval. No change to coverage.
12/06/2018	Medical Policy Committee review
12/19/2018	Medical Policy Implementation Committee approval. No change to coverage.
12/05/2019	Medical Policy Committee review
12/11/2019	Medical Policy Implementation Committee approval. No change to coverage.
05/07/2020	Medical Policy Committee review
05/13/2020	Medical Policy Implementation Committee approval. No change to coverage.
09/10/2020	Coding update

Next Scheduled Review Date: 05/2021

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 2019 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.

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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	No codes
HCPCS	E0935, E0936
ICD-10 Diagnosis	M12.561-M12.569, M15.0-M15.9, M16.0-M16.12, M17.0-M17.12, M17.9, M18.0-M18.12, M19.011-M19.079, M19.111-M19.119, M19.131-M19.139, M19.211-M19.219, M19.231-M19.239, M19.90-M19.93, M23.50, M24.10, M24.111-M24.176, M24.30, M24.311-M24.376, M25.161-M25.169, M25.731-M25.739, M25.741-M25.749, M25.751-M25.759, M25.761-M26.769, M25.771-M25.776, M25.861-M25.869, M70.10-M70.12, M70.040-M70.042, M70.50-M70.52, M70.60-M70.62, M70.70-M70.72, M75.00-M75.02, M76.00-M76.9, M77.20-M77.22, M77.40-M77.42, M77.8, M93.20, M93.211-M93.29, S72.401A-S72.401C, S72.402A-S72.402C, S72.409A-S72.409C, S72.411A-S72.411C,

	S72.412A-S72.412C, S72.413A-S72.413C, S72.414A-S72.414C, S72.415A-S72.415C, S72.416A-S72.416C, S72.421A-S72.421C, S72.422A-S72.422C, S72.423A-S72.423C, S72.424A-S72.424C, S72.425A-S72.425C, S72.426A-S72.426C, S72.431A-S72.431C, S72.432A-S72.432C, S72.433A-S72.433C, S72.434A-S72.434C, S72.435A-S72.435C, S72.436A-S72.436C, S72.441A-S72.441C, S72.442A-S72.442C, S72.443A-S72.443C, S72.444A-S72.444C, S72.445A-S72.445C, S72.446A-S72.446C, S72.451A-S72.451C, S72.452A-S72.452C, S72.453A-S72.453C, S72.454A-S72.454C, S72.455A-S72.455C, S72.456A-S72.456C, S72.461A-S72.461C, S72.462A-S72.462C, S72.463A-S72.463C, S72.464A-S72.464C, S72.465A-S72.465C, S72.466A-S72.466C, S72.471A, S72.472A, S72.479A, S72.491A-S72.491C, S72.492A-S72.493C, S72.499A-S72.499C, S79.101A, S79.102A, S79.109A, S79.111A, S79.112A, S79.119A, S79.121A, S79.122A, S79.129A, S79.131A, S79.132A, S79.139A, S79.141A, S79.142A, S79.149A, S79.191A, S79.192A, S79.199A, S82.001A-S82.001C, S82.002A-S82.002C, S82.009A-S82.009C, S82.011A-S82.011C, S82.012A-S82.012C, S82.013A-S82.013C, S82.014A-S82.014C, S82.015A-S82.015C, S82.016A-S82.016C, S82.021A-S82.021C, S82.022A-S82.022C, S82.023A-S82.023C, S82.024A-S82.024C, S82.025A-S82.025C, S82.026A-S82.026C, S82.031A-S82.031C, S82.032A-S82.032C, S82.033A-S82.033C, S82.034A-S82.034C, S82.035A-S82.035C, S82.036A-S82.036C, S82.041A-S82.041C, S82.042A-S82.042C, S82.043A-S82.043C, S82.044A-S82.044C, S82.045A-S82.045C, S82.046A-S82.046C, S82.091A-S82.091C, S82.092A-S82.092C, S82.099A-S82.099C, S82.101A-S82.101C, S82.102A-S82.102C, S82.109A-S82.109C, S82.111A-S82.111C, S82.112A-S82.112C, S82.113A-S82.113C, S82.114A-S82.114C, S82.115A-S82.115C, S82.116A-S82.116C, S82.121A-S82.121C, S82.122A-S82.122C, S82.123A-S82.123C, S82.124A-S82.124C, S82.125A-S82.125C, S82.126A-S82.126C, S82.131A-S82.131C, S82.132A-S82.132C, S82.133A-S82.133C, S82.134A-S82.134C, S82.135A-S82.135C,

	S82.136A-S82.136C, S82.141A-S82.141C, S82.142A-S82.142C, S82.143A-S82.143C, S82.144A-S82.144C, S82.145A-S82.145C, S82.146A-S82.146C, S82.151A-S82.151C, S82.152A-S82.152C, S82.153A-S82.153C, S82.154A-S82.154C, S82.155A-S82.155C, S82.156A-S82.156C, S82.191A-S82.191A, S82.192A-S82.192C, S82199A-S82.199C, S86.001A, S86.002S, S86.009A, S86.091A, S86.092A, S86.099A, S86.101A, S86.102A, S86.109A, S86.191A, S86.192A, S86.199A, S86.201A, S86.202A, S86.209A, S86.291A, S86.292A, S86.299A, S86.301A, S86.302A, S86.309A, S86.391A, S86.392A, S86.399A, S86.801A, S86.802A, S86.809A, S86.891A, S86.892A, S86.899A, S86.901A, S86.902A, S86.909A, S86.991A, S86.992A, S86.999A, S89.001A, S89.002A, S89.009A, S89.011A, S89.012A, S89.019A, S89.021A, S89.022A, S89.029A, S89.031A, S89.032A, S89.039A, S89.041A, S89.042A, S89.049A, S89.091A, S89.092A, S89.099A, S89.80XA, S89.81XA, S89.82XA, S89.90XA, S89.91XA, S89.92XA, S96.001A, S96.002A, S96.009A, S96.091A, S96.092A, S96.099A, S96.101A, S96.102A, S96.109A, S96.191A, S96.192A, S96.199A, S96.201A, S96.202A, S96.209A, S96.291A, S96.292A, S96.299A, S96.801A, S96.802A, S96.809A, S96.891A, S96.892A, S96.899A, S96.901A, S96.902A, S96.909A, S96.991A, S96.992A, S96.999A, S99.811A, S99.812A, S99.819A, S99.821A, S99.822A, S99.829A, S99.911A, S99.912A, S99.919A, S99.921A, S99.922A, S99.929A, Z47.1, Z96.651, Z96.652, Z96.653, Z96.659 Added codes eff 10/01/2020: M24.19, M24.29, M24.39, M24.49, M24.59, M24.69, M24.89, M25.39, M25.59, M25.69

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and

whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or

B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
    1. Consultation with the Blue Cross and Blue Shield Association technology assessment program (TEC) or other nonaffiliated technology evaluation center(s);
    2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
    3. Reference to federal regulations.

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

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