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## Subject: Knee Arthroplasty

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### DESCRIPTION:

Arthroplasty describes the surgical replacement and or reconstruction of a joint with implanted devices when the joint has been damaged by an arthritic or traumatic process. A normal knee functions as a hinge joint between the femur and the tibia. The surfaces where these bones meet can become worn out over time, due to arthritis or other conditions, which can cause pain and swelling.

Total knee arthroplasty (TKA) replaces and reconstructs all articular joint surfaces. In some cases, only one surface within the knee develops arthritis with associated pain and functional loss. In these cases, a partial knee replacement (PKA) may be necessary to remove and reconstruct only the damaged region of the knee.

Unicompartmental knee arthroplasty (UKA) is also called partial replacement, hemiarthroplasty, unicondylar knee or bicondylar knee arthroplasty, This procedure involves reconstruction of either the medial or lateral weight bearing compartment of the knee, and/or the patellofemoral joint.

Revision arthroplasty describes surgical reconstruction due to failure or complication of a previous arthroplasty. In some cases, the knee prosthesis may wear out or loosen. If loosening is painful, a revision surgery may be necessary. In this procedure some or all of the components of the original replacement prosthesis are removed and replaced with new ones.

### POSITION STATEMENT:

#### **General criteria for elective knee arthroplasty**

Elective knee arthroplasty **meets the definition of medical necessity** when **ALL** of the following are met:

- Knee pain with documented loss of function, which may include painful weight bearing, painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment, and painful mechanical catching, locking, or popping
- Medically stable with no uncontrolled comorbidities (e.g., diabetes)
- Does not have an active local or systemic infection
- Does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program
- Has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk

**Clinical notes should address:**

- Symptom onset, duration, and severity
- Loss of function and/or limitations
- Type and duration of non-operative management modalities

**\*Non-operative management must include at least 2 of the following, unless otherwise specified:**

- Rest or activity modifications/limitations
- Weight reduction with elevated BMI
- Protected weight-bearing with cane, walker or crutches
- Brace/orthosis
- Physical therapy modalities
- Physician-supervised exercise program (including home exercise program)
- Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
- Intra-articular injection(s)

**NOTE:** All requests for TKA, UKA, or revision TKA require documentation in the medical record that information regarding the potential risks, benefits, and complications specific to these procedures was provided to the member.

**Total Knee Arthroplasty (TKA)**

Total knee arthroplasty (TKA) **meets the definition of medical necessity** when the following criteria are met:

- Extensive disease or damage due to rheumatoid arthritis, post-traumatic arthritis (e.g., previous proximal tibia or distal femur fracture causing subsequent arthritis), fracture, or avascular necrosis confirmed by imaging (radiographs, MRI or other advanced imaging), **AND**
- Persistent pain and documented loss of function (**NOTE:** There is no indication to perform TKA in those with severe disease and no symptoms)

**OR**

When **ALL** of the following are met:

- Pain due to advanced osteoarthritis (Kellgren-Lawrence\*\* grade 3 or grade 4 degeneration) that is persistent and severe, and/or has documented loss of function that has been present for at least 6 months resulting in a diminished quality of life
- Failure of at least 3 months of non-operative management
- Physical exam findings demonstrate one or more of the following:
  - Tenderness
  - Swelling/effusion
  - Limited range of motion (decreased from uninvolved side or as compared to a normal joint)
  - Flexion contracture
  - Palpable or audible crepitus
  - Instability and/or angular deformity
- Radiographic findings show evidence of advanced arthritic changes, described as Kellgren-Lawrence grade 3 or grade 4 degeneration, or described as X-rays demonstrating advanced changes such as severe narrowing or bone-on-bone compartment collapse, subchondral sclerosis, osteophyte formation and/or bony deformity **[NOTE: The severity of knee osteoarthritis is commonly determined with weight-bearing radiographs; however, if severe arthritic changes such as bone on bone joint space narrowing are noted on non-weight-bearing images, further weight-bearing images are not required.]**
- No corticosteroid injection into the joint within 3 months of surgery

**NOTE:** Conversion of failed unicompartmental knee arthroplasty (UKA) to a total knee arthroplasty (TKA) will be evaluated on a **case-by-case** basis. There should be documentation that there is no evidence of current, ongoing, or inadequately treated knee infection (ruled out by obtaining erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP)).

**NOTE:** All requests for simultaneous bilateral total knee replacements will be reviewed on a **case by case basis** and records should clearly indicate why simultaneous TKA is preferable to staged procedures.

#### **Contraindications for total knee arthroplasty:**

- Active infection (local or remote)
- Any corticosteroid injection into the joint within 3 months of surgery
- Prior infection at site (unless aspiration with cultures and serology [CBC with differential, ESR, CRP] demonstrates no infection)
  - **NOTE:** If prior infection at site, tissue biopsies should be sent intra-operatively to exclude latent/dormant infection
- Extensor mechanism deficiency
- Neuropathic joint
- Severe peripheral vascular disease
- Compromised soft tissue envelope
- Uncontrolled comorbidities

## **Unicompartmental Knee Arthroplasty (UKA) [Partial Knee Arthroplasty (PKA)]**

Medial or lateral UKA/PKA **meets the definition of medical necessity** when **ALL** of the following are met:

- At least 6 months of pain localized to the medial or lateral compartment
- Failure of at least 3 months of non-operative management
- Total arc of motion (goniometer) > 90 degrees
- Normal ACL or stable reconstructed ACL per physical exam test
- Age > 50 years
- Standing, weight-bearing radiographs demonstrate only unicompartmental disease (with or without patellofemoral involvement), described as Kellgren-Lawrence\*\* grade 3 or 4 degeneration
- Contracture < 5 -10 degrees upon physical exam (goniometer)
- Angular deformity < 10 degrees and passively correctable to neutral upon physical exam (goniometer)
- BMI < 40
- No corticosteroid injection into the joint within 3 months of surgery

**NOTE:** All requests for UKA in individuals with chronic, painless effusion and extensive radiographic arthritis will be evaluated on a **case by case basis**.

### **Contraindications for medial or lateral UKA/PKA:**

- Local or systemic active infection
- Inflammatory arthritis
- Angular deformity or contracture greater than indicated range
- Significant arthritic involvement of other knee compartments
- ACL instability
- Poor bone quality or significant osteoporosis or osteopenia
- Meniscectomy of the opposite compartment
- Stiffness greater than indicated range of motion

Patellofemoral UKA/PKA **meets the definition of medical necessity** when **ALL** of the following are met:

- Failure of prior patellofemoral unloading procedures (e.g., Maquet, Fulkerson)
- Failure of at least 3 months of non-operative management
- Standing, AP or PA weight-bearing radiographs demonstrate only unicompartmental disease of the patellofemoral joint, described as Kellgren-Lawrence\*\* grade 3 or grade 4 degeneration, with no evidence of medial or lateral arthritis

**OR**

When **ALL** of the following are met:

- At least 6 months of isolated patellar/anterior knee pain

- Patellar/anterior knee pain that is exacerbated by stairs, inclines, transfers or prolonged sitting
- Reproducible patellofemoral pain upon physical exam
- No ligamentous instability upon physical exam
- Failure of at least 3 months of non-operative management
- Standing, AP or PA weight-bearing radiographs demonstrate only unicompartmental disease of the patellofemoral joint, described as Kellgren-Lawrence\*\* grade 3 or grade 4 degeneration, with no evidence of medial or lateral arthritis

#### **Contraindications for patellofemoral UKA/PKA:**

- Any corticosteroid injection into the joint within 3 months of surgery
- Local or systemic active infection
- Inflammatory arthritis
- Angular deformity or contracture greater than indicated range
- Significant arthritic involvement of the medial or lateral knee compartment(s)
- Ligament instability
- Poor bone quality or significant osteoporosis or osteopenia
- Stiffness greater than indicated range of motion

#### **Revision Arthroplasty**

Revision total knee arthroplasty (TKA) **meets the definition of medical necessity** when **ALL** of the following criteria are met:

- Previous removal of infected knee prosthesis
- No evidence of current, ongoing, or inadequately treated knee infection [documented by a normal erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP)], **AND** off antibiotics at the time of re-implantation surgery
  - **NOTE:** If these inflammatory markers are elevated, further evaluation is required, including an aspiration with synovial fluid WBC count, gram stain and cultures, or an intraoperative frozen biopsy.

**OR**

- When **ALL** of the following criteria are met:
  - Symptomatic UKA/PKA or TKA as evidenced by persistent, severe disabling pain, complaints of instability, mechanical abnormalities (“clunking” or audible crepitus), any of which result in a loss of function
  - Any of the following findings upon physical exam:
    - Tenderness to palpation objectively attributable to the implant
    - Swelling or effusion
    - Pain on weight-bearing or motion
    - Instability on stress-testing

- Abnormal or limited motion (compared to usual function)
- Palpable or audible crepitus or “clunking” associated with reproducible pain
- Aseptic loosening, instability, osteolysis, progressive bone loss or mechanical failure confirmed on radiographic or advanced imaging (bone scan, CT scan, or MRI) (Cases that do not demonstrate any radiographic abnormalities yet show findings of gross instability on physical examination will be evaluated on a **case-by-case** basis)
- No corticosteroid injection into the joint within 3 months of surgery

**NOTE:** Removal of an infected knee prosthesis and subsequent insertion of antibiotic spacer is not considered an elective surgery and is not considered a revision knee arthroplasty.

**Contraindications for revision arthroplasty:**

- Active infection (local or remote)
- Any corticosteroid injection into the joint within 3 months of surgery
- Deficiency of the extensor mechanism
- Neuropathic joint
- Unstable or poorly controlled comorbidities
- Severe peripheral vascular disease
- Compromised soft-tissue envelope (revision may be performed in conjunction with plastic surgical consultation for soft tissue coverage via pedicle flaps or other acceptable procedure)

The following procedures are considered **experimental or investigational**, as there is a lack of clinical scientific evidence published in peer-reviewed literature to permit conclusions on safety and net health outcomes:

- Bicompartamental arthroplasty
- Robot-assisted TKA (Makoplasty)

**\*\*Kellgren-Lawrence Grading System:**

Grade 0: No radiographic features of osteoarthritis

Grade 1: Possible joint space narrowing and osteophyte formation

Grade 2: Definite osteophyte formation with possible joint space narrowing

Grade 3: Moderate multiple osteophytes, definite narrowing of joint space, some sclerosis and possible deformity of bone contour

Grade 4: Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour

## **BILLING/CODING INFORMATION:**

### **CPT Coding**

27438	Arthroplasty, patella; with prosthesis
27446	Arthroplasty, knee, condyle and plateau; medial OR lateral compartment
27447	Arthroplasty, knee, condyle and plateau; medial AND lateral compartments with or without patella resurfacing (total knee arthroplasty)
27486	Revision of total knee arthroplasty, with or without allograft; 1 component
27487	Revision of total knee arthroplasty, with or without allograft; femoral and entire tibial component
27488	Removal of prosthesis, including total knee prosthesis, methylmethacrylate with or without insertion of spacer, knee

## **REIMBURSEMENT INFORMATION:**

Refer to section entitled [POSITION STATEMENT](#).

## **PROGRAM EXCEPTIONS:**

**Federal Employee Program (FEP):** Follow FEP guidelines.

**State Account Organization (SAO):** Follow SAO guidelines.

**Medicare Advantage products:** The following Local Coverage Determination (LCD) was reviewed on the last guideline review date: Major Joint Replacement (Hip and Knee) (L33618), located at [fcsso.com](http://fcsso.com).

## **DEFINITIONS:**

No guideline specific definitions apply.

## **RELATED GUIDELINES:**

[Autologous Chondrocyte Implantation \(ACI\), 02-20000-17](#)

[Meniscal Allograft Transplantation, 02-20000-25](#)

[Computer Assisted Musculoskeletal Surgical Navigational Orthopedic Procedure, 02-20000-30](#)

[Knee Arthroscopy and Open, Non-Arthroplasty Knee Repair, 02-20000-65](#)

## **OTHER:**

None applicable.

## **REFERENCES:**

1. AHRQ National Guideline Clearinghouse. NGC 108059: American Academy of Orthopaedic Surgeons clinical practice guideline on surgical management of osteoarthritis of the knee. American Academy of Orthopaedic Surgeons. December 4, 2015.
2. Belmont PJ, et al. Thirty-Day Postoperative Complications and Mortality Following Total Knee Arthroplasty Incidence and Risk Factors Among a National Sample of 15,321 Patients. The Journal of Bone & Joint Surgery 96.1 (2014): 20-26.

3. Blue Cross Blue Shield Medical Policy Reference Manual. 7.01.144, Patient-Specific Cutting Guides and Custom Knee Implants (September 2015).
4. Blue Cross Blue Shield Medical Policy Reference Manual. 7.01.96, Computer-Assisted Musculoskeletal Surgical Navigational Orthopedic Procedure (June 2015).
5. Cram P, et al. Total knee arthroplasty volume, utilization, and outcomes among Medicare beneficiaries, 1991-2010. JAMA 308.12 (2012): 1227-1236.
6. Della Valle CJ. (2010). Javad Parvizi, MD. J Am Acad Orthop Surg, 18, 771-772.
7. Fernandes L, et al. EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis. Annals of the rheumatic diseases 72.7 (2013): 1125-1135.
8. First Coast Service Options (FCSO). Local Coverage Determination (LCD): Major Joint Replacement (Hip and Knee) (L33618) (October 1, 2015).
9. Gossec L, et al. The role of pain and functional impairment in the decision to recommend total joint replacement in hip and knee osteoarthritis: an international cross-sectional study of 1909 patients. Report of the OARSI-OMERACT Task Force on total joint replacement. Osteoarthritis and Cartilage 19.2 (2011): 147-154.
10. Hochberg MC, et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. Arthritis care & research 64.4 (2012): 465-474.
11. InterQual® 2014. CP: Procedures. Total Joint Replacement (TJR), Knee.
12. Losina E, et al. The dramatic increase in total knee replacement utilization rates in the United States cannot be fully explained by growth in population size and the obesity epidemic. The Journal of Bone & Joint Surgery 94.3 (2012): 201-207.
13. National Imaging Associates, Inc. Knee Arthroplasty Clinical Guideline, 2016.
14. National Imaging Associates, Inc. Knee Arthroplasty Clinical Guideline, 2017.
15. National Imaging Associates, Inc. Knee Arthroplasty Clinical Guideline, 2018.
16. National Imaging Associates, Inc. Knee Arthroplasty Clinical Guideline, 2019.
17. National Institute for Health and Care Excellence (NICE). Interventional procedure guidance [IPG345]: Mini-incision surgery for total knee replacement. May 2010. Accessed at <https://www.nice.org.uk>.
18. Thomsen MG, et al. Indications for knee arthroplasty have remained consistent over time. Dan Med J 59 (2012): A4492.

### **COMMITTEE APPROVAL:**

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy & Coverage Committee on 06/27/19.

### **GUIDELINE UPDATE INFORMATION:**

10/15/16	New Medical Coverage Guideline.
04/15/17	Revision: updated criteria for total knee arthroplasty; unicompartmental knee arthroplasty (UKA) (partial arthroplasty, hemiarthroplasty, unicondylar knee arthroplasty, and bicondylar knee arthroplasty); and revision arthroplasty. Updated references.
07/15/18	Scheduled review. Revised description. Added general criteria for elective knee arthroplasty. Revised criteria for total knee arthroplasty and revision arthroplasty; separated UKA/PKA criteria into medial/lateral and patellofemoral. Deleted references to "computer-



	navigated instrumentation”, “patient-specific instrumentation”, and gender-specific instrumentation”. Updated references.
07/15/19	Scheduled review. Revised TKA and TKA revision criteria. Updated references.
08/15/19	Revision. Deleted extreme morbid obesity (BMI > 40) as a contraindication for TKA.