Cohere Medicare Advantage Policy - Knee Arthroplasty

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Other Notices:

Guideline Information:

Specialty Area: Disorders of the Musculoskeletal System
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Type: [**X**] Adult (18+ yo) | [_] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Knee Arthroplasty

Benefit Category

Not applicable.

Recommended Clinical Approach

Consecutive knee arthroplasty should be at least three months apart.[1] Most patients wait six months to one year between the two knee arthroplasty procedures. Recommendations regarding the timing of bilateral total knee arthroplasty (TKA) are unavailable.[2-3] Six months or more is the standard between arthroplasty procedures for better outcomes.

Bilateral TKA may be appropriate for patients over 70 or who have an American Society of Anesthesiologists Physical Status Classification System (ASA) status of I or II. Periarticular anesthesia is recommended to decrease postoperative pain and opioid use (e.g., local anesthesia infiltration, peripheral nerve block, and neuraxial anesthesia). General anesthesia is also acceptable.

Revision arthroplasty is performed on an individual who has had a prior hip or knee arthroplasty. Revision arthroplasty may be needed when pain or other symptoms occur as a result of failure of the prior surgery. Failure may occur as a result of infection of the joint, bone loss in the structures supporting the prosthesis, fracture, aseptic loosening of the components, wear of the prosthetic components, and other reasons.[4]

Unicompartmental knee replacement involves one compartment of the knee, usually medial, as opposed to a total knee replacement, which addresses all three knee compartments.

Evaluation of Clinical Benefits and Potential Harms

Cohere Health uses the criteria below to ensure consistency in reviewing the conditions to be met for coverage of knee arthroplasty procedures. This process helps to prevent both incorrect denials and inappropriate approvals of medically necessary services. Specifically, limiting incorrect approvals

reduces the risks associated with unnecessary procedures, such as complications from surgery, adverse reactions, and infection.

The potential clinical harms of using these criteria may include:

- Adverse effects from delayed or denied treatment, such as increased pain and decreased mobility, can worsen patient outcomes. According to Katz, patients with knee osteoarthritis are sedentary and have more comorbidities than those patients without knee arthritis resulting in a 20% higher age-adjusted mortality.[5] There, inadequate management of severe knee conditions due to inappropriate denials can result in comorbidities or mortality.
- Risks with inappropriate surgical procedures include infection, bleeding requiring a transfusion, injury to neurovascular structures, anesthetic risk, and need for repeat or additional procedures due to implant failure, periprosthetic fracture, and ongoing pain. Bin et al reviewed the literature and reported that the risk for postoperative complications, revisions, and reoperations is greatest with knee joint distraction and lowest with unicompartmental knee arthroplasty and total knee arthroplasty but there are risks with surgical intervention.[6] Papakostidis et al describe the most serious adverse events (SAEs) for joint arthroplasty, including a return to the operating room, death, coma, venous thromboembolism, deep infection, stroke or cerebrovascular accident, or pneumonia.[7] For total knee arthroplasty, the most common SAEs are venous thromboembolism and genitourinary complications that can result in renal insufficiency or renal failure.
- Increased healthcare costs and complications from the inappropriate use of emergency services for any additional treatments.

The clinical benefits of using these criteria include:

- Improved patient outcomes by ensuring timely and appropriate access to knee arthroplasty for the patients selected for best outcomes. The goal of total knee arthroplasty is to alleviate pain, and improve patient function and mobility.[8] The policy guidelines help to select the most appropriate candidate for surgery and are consistent with the AAOS Appropriate use criteria for a knee replacement.[9] These include the patient is symptomatic from their knee arthritis, there are imaging findings consistent with knee arthritis, they have physical exam findings that exclude other sources of pain and point to the knee as the primary source of pain, they have tried and failed appropriate conservative

treatment, and shared decision making with the patient with realistic expectations.

- Unicompartmental knee arthroplasty is an option for patients with isolated unicompartmental arthritis due to osteonecrosis. It is not a good treatment motion for arthritis in more than one compartment of the knee. Careful patient selection is needed to ensure good outcomes. According to Chalmers et al, the unicompartmental knee survivorship from conversion to a total knee arthroplasty is 89% at 5 years and 76% at 10 years.[10] The most common reason to convert to a total knee arthroplasty was due to progression of knee degenerative, therefore careful patient selection ensuring there is not arthritis in the other two compartments of the knee is necessary to ensure a good outcome.
- Patellofemoral knee arthroplasty is a surgical option for isolated patellofemoral arthritis. This surgery is considered bone and ligament preserving. The most common reason for failure is due to progression of the knee arthritis requiring conversion to a total knee arthroplasty so patient selection is of utmost importance. Ennis et al report the 5 and 10 year survivorship of 91.7% and 83.3% respectively with an annual revision rate of 2.18%.[11]
- Reduction in complications and adverse effects from unnecessary procedures as described above.
- Enhanced overall patient satisfaction with return of function and healthcare experience. According to Woodland, positive patient reported outcomes following a total knee arthroplasty are noted in several studies with reduced pain, improved function and increased quality of life for individuals over age 65.[12]

This policy includes provisions for expedited reviews and flexibility in urgent cases to mitigate risks of delayed access. Evidence-based criteria are employed to prevent inappropriate denials, ensuring that patients receive medically necessary care. The criteria aim to balance the need for effective treatment with the minimization of potential harms, providing numerous clinical benefits in helping avoid unnecessary complications from inappropriate care.

In addition, the use of these criteria is likely to decrease inappropriate denials by creating a consistent set of review criteria, thereby supporting optimal patient outcomes and efficient healthcare utilization.

Medical Necessity Criteria

Indications

- ➔ **Knee arthroplasty** is considered appropriate if **ANY** of the following is **TRUE**:
  - ◆ The procedure is an **initial total knee arthroplasty** and **ALL** of the following are **TRUE**[5,13]:
    - If a bilateral total knee arthroplasty is performed, documentation of advanced joint disease on radiographs must be present in both knees (or not applicable); **AND**
    - **ANY** of the following is **TRUE:**
      - Advanced joint disease and **ALL** of the following:
        - ◆ Radiographic supported evidence or when conventional radiography is not adequate, magnetic resonance imaging (MRI) and/or computed tomography (CT) (in situations when MRI is non-diagnostic or not able to be performed) supported evidence (subchondral cysts, subchondral sclerosis, periarticular osteophytes, joint subluxation, joint space narrowing, avascular necrosis); **AND**
        - ◆ Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement **(see *note below)**; **AND**
        - ◆ Pain or functional disability from injury due to trauma or arthritis of the joint; **OR**
      - Failure of a previous osteotomy; **OR**
      - Distal femur fracture; **OR**
      - Malignancy of the distal femur, proximal tibia, knee joint, or adjacent soft tissues; **OR**
      - Failure of previous unicompartmental knee replacement; **OR**
      - Avascular necrosis of the knee; **OR**
      - Proximal tibia fracture; **OR**

- The procedure is a **repeat or revision TKA,** and **ANY** of the following is **TRUE**[14]:
  - Disabling pain or functional disability[8]; **OR**
  - Fracture or dislocation of the patella[8]; **OR**
  - Loosening of one or more components; **OR**
  - Fracture or mechanical failure of one or more components; **OR**
  - Infection; **OR**
  - Treatment of periprosthetic fracture of distal femur, proximal tibia, or patella; **OR**
  - Progressive or substantial periprosthetic bone loss; **OR**
  - Bearing surface wear leading to symptomatic synovitis; **OR**
  - Implant or knee misalignment; **OR**
  - Dislocation of the knee joint[8]; **OR**
  - Knee stiffness (arthrofibrosis); **OR**
  - Tibiofemoral or knee joint instability; **OR**
  - Extensor mechanism instability; **OR**
- The procedure is a **unicompartmental knee arthroplasty,** and **ANY** of the following is **TRUE**[9]:
  - Unicompartmental knee degenerative joint disease and **ALL** of the following are **TRUE**:
    - Disabling pain and/or functional disability limits activities of daily living (ADLs); **AND**
    - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
    - **ANY** of the following:
      - Weight reduction if BMI is greater than 40; **OR**
      - Documentation of attempted weight loss if BMI is greater than 40; **OR**
      - Weight loss not applicable (BMI less than 40); **AND**
    - Weight-bearing radiograph shows **ANY** of the following evidence of osteoarthritis in a single compartment of the knee:

        - Joint space narrowing (less than 50%) and marginal osteophytes or subchondral sclerosis; **OR**
        - Joint space narrowing (greater than 50%); **OR**
        - Complete joint space loss; **OR**
    - Unicompartmental osteonecrosis[10]; **OR**
    - Unicompartmental post-traumatic joint destruction; **OR**
    - Partial resection of the knee needed for treatment of malignancy; **OR**
- The procedure is **patellofemoral arthroplasty** and **ANY** of the following is **TRUE**[11,15]:
    - Knee patellofemoral degenerative joint disease and **ALL** of the following are **TRUE**:
        - Isolated pain in the front of the knee; **AND**
        - Disabling pain and/or functional disability limit activities of daily living (ADLs); **AND**
        - Failure of conservative management (e.g., rest, analgesics, physical therapy, oral or injectable corticosteroids) must be documented for a period of greater than 3 months. Documentation should include detailed evidence of the measures taken, rather than solely a physician's statement; **AND**
        - **ANY** of the following:
            - Weight reduction if BMI is greater than 40; **OR**
            - Documentation of attempted weight loss if BMI is greater than 40; **OR**
            - Weight loss not applicable (BMI less than 40); **AND**
        - Weight-bearing radiograph as well as Merchant's view show **ANY** of the following evidence of osteoarthritis in the patellofemoral compartment:
            - Joint space narrowing (less than 50%) and marginal osteophytes or subchondral sclerosis; **OR**
            - Joint space narrowing (greater than 50%); **OR**
            - Complete joint space loss; **OR**
    - Patellofemoral post-traumatic destruction (i.e., history of patella fracture); **OR**
    - Dysplasia of the trochlea.

*__NOTE__: In some circumstances, for example, if the patient has bone-on-bone articulation, severe deformity, pain, or significant disabling interference with activities of daily living, the surgeon may determine that nonsurgical medical management would be ineffective or counterproductive and that the best treatment option, after explaining the risks, is surgical. If medical management is deemed inappropriate, the medical record should indicate the rationale for and circumstances under which this is the case.[14-16]

Non-Indications

- ➔ **Knee arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**[17-18]:
  - ◆ Active infection of the knee joint or active systemic bacteremia; **OR**
  - ◆ Active urinary tract or dental infection; **OR**
  - ◆ Active skin infection (with the exception of recurrent cutaneous staph infections) or open wound within the planned surgical site of the knee; **OR**
  - ◆ Rapidly progressive neurological disease, etiologic for pain, instability, or disability[19]; **OR**
  - ◆ **ANY** of the following relative contraindications:
    - Insufficiency of extensor mechanism/quadriceps; **OR**
    - Any process that is rapidly destroying bone; **OR**
    - Neurotrophic arthritis.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Codes	Code Description
27437	Arthroplasty, patella; without prosthesis
27438	Arthroplasty, patella; with prosthesis
27440	Arthroplasty, knee, tibial plateau

27441	Arthroplasty, knee, tibial plateau; with debridement and partial synovectomy
27442	Arthroplasty, femoral condyles or tibial plateau(s), knee
27443	Arthroplasty, femoral condyles or tibial plateau(s), knee; with debridement and partial synovectomy
27445	Arthroplasty, knee, hinge prosthesis (e.g., Walldius type)
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
27599	Unlisted procedure, femur or knee

Medical Evidence

Shichman et al. (2023) analyzed data from the Centers for Medicare & Medicaid Services (CMS) Medicare/Medicaid Part B National Summary and the number of procedures based on Current Procedural Terminology (CPT) codes. The codes were separated into two groups - primary total hip arthroplasty (THA) or total knee arthroplasty (TKA). A total of 480,958 primary TKA were performed in 2019. The values were a baseline for producing point forecasts for procedures expected to be performed between 2020-2060 and 95% forecast intervals (FIs). From 2000 to 2019, TKA increased annually by 156%. Regression analysis predicts annual growth rates of 4.44% for TKA - an increase of 24.28% for TKA every five years post-2020 is expected. By 2040, TKAs are expected to reach 1,222,988. That number will increase to 2,917,959 for TKAs by 2060. The authors note that by 2040 the number of TKAs is projected to rise by 139% by 2040 and 469% by 2060. Accurately projecting future arthroplasty needs is crucial for understanding future healthcare utilization and surgeon demand. The findings are specific to the Medicare population; additional analysis is required to determine if other groups apply.[20]

Bin et al. (2023) performed a meta-analysis on randomized control trials (RCTs) to compare surgical interventions for knee osteoarthritis including total knee arthroplasty (TKA), unicompartmental knee arthroplasty (UKA), high tibial osteotomy (HTO), bicompartmental knee arthroplasty (BCA), bi-unicompartmental knee arthroplasty (BIU), and knee joint distraction (KJD). Complications, revisions, reoperations, and functional outcomes were analyzed in 21 studies, including 17 RCTs. Overall, TKA and UKA offer the best outcomes.[6]

Papakostidis et al. (2021) analyzed serious adverse events (SAEs) following TKA and thirty-day hospital readmission rates. The authors note reduced SAEs in the last decade, specifically surgical complications, venous thromboembolism (VTE) events, and infection. The decrease results from stricter protocols for VTE prevention, patient decolonization procedures, air quality optimizing strategies during surgery, preoperative cardiac clearance, increased diabetic control, and participation in weight reduction programs.[7]

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