



Notice of Independent Review Decision-WCN



**DATE OF REVIEW: 4-20-11**

**IRO CASE #:**

**CLAIMS EVAL**

**DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE**

*Utilization Review and  
Peer Review Services*

Left knee plate and screw removal outpatient and total knee replacement 20680, 27447, 20926

**A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION**

American Board of Orthopaedic Surgery-Board Certified

**REVIEW OUTCOME**

Upon independent review the reviewer finds that the previous adverse determination/adverse determinations should be:

- Upheld (Agree)
- Overturned (Disagree)
- Partially Overturned (Agree in part/Disagree in part)

Provide a description of the review outcome that clearly states whether or not medical necessity exists for each of the health care services in dispute.

**INFORMATION PROVIDED TO THE IRO FOR REVIEW**

**PATIENT CLINICAL HISTORY [SUMMARY]:**

CT of the left knee shows comminuted displaced fractures of the proximal tibia with depression of the medial tibial plateau. Small fracture fragments adjacent to the proximal tibial medially. Avulsion fracture of the proximal tibia laterally and proximal fibula with displacement, soft tissue swelling, joint effusion. Fracture of the distal femur medial condyle anteriorly. The anterior and posterior cruciate ligaments cannot be evaluated on this study.

3-15-10 MD., performed a Doctor Selected by Treating Doctor Evaluation. He certified the claimant had reached MMI on 1-25-10 and awarded the claimant 3% impairment rating based on ACL deficiency.

12-22-10 MD., the claimant reports continuing laxity of his left knee. He reports that his left knee moves forward. On exam, the claimant has no effusion. Anterior drawer sign is positive. Lachman's sign is positive. The evaluator recommended x-rays of the knee, brace for stability for his ACL. The claimant was referred to his PCP for his severe malignant hypertension.

12-27-10 physical therapy evaluation.

Ot on 1-28-11, 2-14-11 and 2-16-11.

1-7-11 X-rays of the left knee was unremarkable for osseous abnormality. Small distal medial femoral osteochondroma.

1-7-11 X-rays of the left knee addendum shows mild osteoarthritis in the medial and patellofemoral compartments.

1-12-11 MD., the claimant returns for followup of his left knee fracture. He reports that it continues to hurt and is loose. He also reports a protruding screw from his ORIF surgery. He did see a Designated Doctor who reported that there was no evidence that his knee was completely healed. On exam, there was no effusion. Bulge sign is negative. Anterior drawer sign was positive. There is a protrusion inferior to his knee corresponding to the screw, which is tender. He has pain with extension and flexion. Plan: Return him to the surgeon, get physical therapy.

1-28-11 MD., the claimant is seen due to left knee pain. He suffered a job related injury on xx/xx/xx. The claimant had significant fracture of the left proximal tibia. He suffered an injury of the left knee area when wood beams fell across his leg. He underwent ORIF of the left proximal tibia fracture. He had his followup in. He has continued to have deformity and pain in the left leg area. In the proximal tibia, he has pain over the lateral aspect of the knee. He has continued with deformity and pain in the left leg. On exam, he has a lateral aspect of the tibia, the plate can be palpated. He has tenderness along the lateral joint line. There is mild effusion of the knee. Ligament stress showed posterior instability with a probable injury to the posterior capsule and posterior cruciate ligament. There is traumatic arthritic change of the knee joint. Assessment: Left knee traumatic arthritis and ligamentous instability. Plan: The evaluator recommended a knee plate and screw removal from the tibia and total knee replacement.

2-16-11 MD., the evaluator reviewed the x-rays which showed tricompartmental arthritis with surgery changes. Hardware is noted. The claimant is 5'4" and weighs 141 lbs. He has had considerable physical therapy and is currently on a home exercise program. His physical abilities are severely limited by the instability of his knee. He has had injections after the initial surgery. Pain and range of motion limitations have continued. He has been wearing a brace with little effect on the instability of the knee. A total knee replacement has been ordered in order to restore function.

2-16-11 MD., performed a Utilization Review. As per medical records, the patient complains of deformity and left knee pain. The pertinent physical findings noted along the lateral aspect of the tibia, the plate can be palpated. He had tenderness along the lateral joint line. There is mild effusion of the knee. Ligament stress testing showed there is posterior instability with a probable injury to the posterior capsule and posterior cruciate ligament. X-rays were unremarkable for

acute osseous abnormality. Small distal medial femoral osteochondroma. Treatment has included a brace and physical therapy. However, there is no documentation of at least 2 of the 3 compartments affected, objective findings (Body Mass Index of less than 35), imaging findings (osteoarthritis on standing x-ray or arthroscopy report), and conservative treatment (medications and either viscosupplementation injections or steroid injection). Therefore, the necessity of the request was not established. Determination: Based on the clinical information submitted for this review and using the evidence-based, peer-reviewed guidelines referenced above, this request for left knee.

3-17-11 MD., performed a Utilization Review. On March 10, 2011, he spoke with Nurse Case Manager. He discussed the case and he asked for reports of the imaging studies. She will call back and get the fax number as she is in her car and only 1-2 minutes from the office. Based on the medical records and imaging studies provided there is no objective evidence to indicate that a total knee replacement is required. Plain x-rays reveal only mild osteoarthritic changes. Addendum x-ray report of the left knee dated 1/7/2011, impression is mild osteoarthritis in the medial, and Patellofemoral compartments. This request does not meet Official Disability Guidelines criteria and is not certified. Determination: Non-certified. Based on the clinical information submitted for this review and using the evidence-based, peer-reviewed guidelines referenced above, this request for outpatient left knee plate and screw removal with total knee replacement 20680, 27447 and 20926 is non-certified.

3-24-11 MD., the claimant is a male who suffered a job related injury to his left knee. He had a comminuted fracture of the proximal tibia which was intraarticular in nature. He had open reduction internal fixation of the proximal tibia. The claimant is 5'10" and weighs 175 lbs. He has continued pain in the left knee. He has inability to bear full weight. He uses a cane. He has had bracing of the knee. He has had multiple cortisone injections and was given a series of Synvisc injections previously. The claimant was initially seen on 1-28-11. Weight bearing x-rays of the left knee were obtained. These reveal a medial placement of the Synthes plate and screws. Long cancellus screws re present just on the edge of the joint entering along the medial compartment and traversing across the tibia to the latera medial and lateral compartment. The head of the screw appears to be just on the edge of the joint surface itself. There is marked narrowing in the medial and lateral compartments where loss of articular cartilage has occurred. There is eburnation of the medial tibial plateau where an intraarticular fracture has occurred in this area. There is near bone on bone in this compartment and in the lateral compartment. There is hypertrophy of the tibial spines. On the anterior posterior examination there is actually offset of the tibia under the femur. The tibia is offset about 2 cm to the lateral side of the knee. This malalignment is certainly creating biomechanical dysfunction in this knee. On exam, there is marked instability in the anterior posterior aspect of the knee. His anterior posterior drawers are both 3+ positive. The evaluator suspected he had torn anterior and posterior cruciate ligaments. The pain and giving way in the knee is of a disabling nature. Due to the failure of conservative treatment and the significant degree of deformity and pain, he felt that it was a reasonable recommendation is a total knee replacement.

**ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION.**

**THE xx YEAR OLD CLAIMANT HAS DOCUMENTED POSTTRAUMATIC ARTHRITIS OF THE LEFT KNEE. THERE HAS BEEN REASONABLE DOCUMENTATION OF A TRIAL AND FAILURE OF MEDICATIONS, BRACING, CORTISONE AND VISCO-SUPPLEMENTATION INJECTIONS. THE CLAIMANT HAS DOCUMENTED MULTI COMPARTMENT OSTEOARTHRITIS OF THE KNEE AND A BMI LESS THAN 34. WITH A PAINFUL AND UNSTABLE KNEE THAT HAS NOT RESPONDED TO REASONABLE NON OPERATIVE TREATMENT, THE PROPOSED LEFT KNEE PLATE AND SCREW REMOVAL OUTPATIENT**

## **AND TOTAL KNEE REPLACEMENT 20680, 27447, 20926 IS REASONABLE AND MEDICALLY NECESSARY AS PER THE APPLICABLE ODG GUIDELINES.**

**ODG-TWC, last update 4-11-11 Occupational Disorders of the Knee – Total knee replacement:** Recommended as indicated below. Total hip and total knee arthroplasties are well accepted as reliable and suitable surgical procedures to return patients to function. The most common diagnosis is osteoarthritis. Overall, total knee arthroplasties were found to be quite effective in terms of improvement in health-related quality-of-life dimensions, with the occasional exception of the social dimension. Age was not found to be an obstacle to effective surgery, and men seemed to benefit more from the intervention than did women. (Ethgen, 2004) Total knee arthroplasty was found to be associated with substantial functional improvement. (Kane, 2005) Navigated knee replacement provides few advantages over conventional surgery on the basis of radiographic end points. (Bathis, 2006) (Bauwens, 2007) The majority of patients who undergo total joint replacement are able to maintain a moderate level of physical activity, and some maintain very high activity levels. (Bauman, 2007) Functional exercises after hospital discharge for total knee arthroplasty result in a small to moderate short-term, but not long-term, benefit. In the short term physical therapy interventions with exercises based on functional activities may be more effective after total knee arthroplasty than traditional exercise programs, which concentrate on isometric muscle exercises and exercises to increase range of motion in the joint. (Lowe, 2007) The safety of simultaneous bilateral total knee replacement remains controversial. Compared with staged bilateral or unilateral total knee replacement, simultaneous bilateral total knee replacement carries a higher risk of serious cardiac complications, pulmonary complications, and mortality. (Restrepo, 2007) Accelerated perioperative care and rehabilitation intervention after hip and knee arthroplasty (including intense physical therapy and exercise) reduced mean hospital length of stay (LOS) from 8.8 days before implementation to 4.3 days after implementation. (Larsen, 2008) In this RCT, perioperative celecoxib (Celebrex) significantly improved postoperative resting pain scores at 48 and 72 hrs, opioid consumption, and active ROM in the first three days after total knee arthroplasty, without increasing the risks of bleeding. The study group received a single 400 mg dose of celecoxib, one hour before surgery, and 200 mg of celecoxib every 12 hours for five days. (Huang, 2008) Total knee arthroplasty (TKA) not only improves knee mobility in older patients with severe osteoarthritis of the knee, it actually improves the overall level of physical functioning. Levels of physical impairment were assessed with three tools: the Nagi Disability Scale, the Instrumental Activities of Daily Living Scale (IADL) and the Activities of Daily Living (ADL) Scale. Tasks on the Nagi Disability Scale involve the highest level of physical functioning, the IADL an intermediate level, and the ADL Scale involves the most basic levels. Statistically significant average treatment effects for TKA were observed for one or more tasks for each measure of physical functioning. The improvements after TKA were "sizeable" on all three scales, while the no-treatment group showed declining levels of physical functioning. (George, 2008) This study showed that total knee replacement is second the most successful orthopaedic procedure for relieving chronic pain, after total hip. The study compared the gains in quality of life achieved by total hip replacement, total knee replacement, surgery for spinal stenosis, disc excision for lumbar disc herniation, and arthrodesis for chronic low back pain. Hip replacement reduced pain to levels normal for age, reduced physical functioning to within 75% normal levels, and restored quality of life to virtually normal levels. Total knee replacement was the next most successful procedure, and it all but eliminated pain, improved physical functioning to 60% normal, and restored quality of life to within 65% of normal. (Hansson, 2008) A 6-week program of progressive strength training targeting the quadriceps femoris muscle group substantially improves strength and function following total knee arthroplasty for treatment of osteoarthritis, compared to patients who received standard of care therapy; however, addition of neuromuscular electrical stimulation (NMES) to the strength training exercise did not improve outcomes. (Pettersen, 2009) Knee replacement surgery is expensive but worth the cost, especially if performed by experienced surgeons, according to a

recent study. Some \$11 billion is spent on 500,000 total knee replacements each year in the United States, and the number is projected to multiply seven times by 2030 because of the aging, overweight population. Over 90% knee replacements are successful, knee pain goes away and patients become more mobile. In the study, knee replacement surgery and subsequent costs added up to \$57,900 per patient, which was \$20,800 more than was spent on those who did not get the surgery. Those who got artificial knees lived more than a year longer in good health than those who did not, and the researchers calculated the added cost per year of good-quality life at \$18,300. (Losina, 2009) In a 7-year prospective study, patients with severe osteoarthritis who had total knee replacement had significant improvements in health-related quality of life, but health outcomes were negatively influenced by obesity and postdischarge complications, and women typically did not get as much benefit from surgery as do men. Overall, 76.8% were satisfied or very satisfied with their total knee replacement, and 79.5% said they would have the surgery again in similar circumstances. (Núñez, 2009) More than 95% of patients report that they are satisfied with the outcome of their total knee replacement 1 year after surgery. Factors that increased risk for dissatisfaction were younger age, being female, valgus alignment of the knee, and posttraumatic arthritis. (Ayers, 2010) Patients undergoing total knee arthroplasty (TKA) should receive ongoing COX-2 Inhibitor therapy for 6 weeks after their procedure, according to this unpublished RCT. (Schroer, 2011)

Unicompartmental knee replacement: Recommended as an option. Unicompartmental knee replacement is effective among patients with knee OA restricted to a single compartment. (Zhang, 2008) In this RCT, the early results demonstrated that the unicompartmental knee replacement (UKR) group had less complications and more rapid rehabilitation than the total knee replacement (TKR) group. At five years there were an equal number of failures in the two groups but the UKR group had more excellent results and a greater range of movement. The 15 years survivorship rate based on revision or failure for any reason was 89.8% for UKR and 78.7% for TKR. The better early results with UKR are maintained at 15 years with no greater failure rate. (Newman, 2009) Long-term studies are needed to appropriately define the role of less invasive unicompartmental surgical approaches. (Borus, 2008) Unicompartmental knee arthroplasty (UKA) and total knee arthroplasty (TKA) are both recommended for the treatment of medial compartment osteoarthritis in the varus knee. Citing the arduous rehabilitation and bone loss associated with traditional knee arthroplasty, some opt for UKA, especially in young, high-demand patients. (McAllister, 2008) With appropriate patient selection, UKAs are a successful option for patients with osteoarthritis. (Dalury, 2009)

Obesity: After total knee arthroplasty (TKA) for osteoarthritis of the knee, obese patients fare nearly as well as their normal-weight peers. A British research team reports that higher BMI (up to 35) should not be a contraindication to TKA, provided that the patient is sufficiently fit to undergo the short-term rigors of surgery. TKA also halts the decline and maintains physical function in even the oldest age groups (> 75 years). (Cushnaghan, 2008) In this study, the rate of failure of total knee implants, at least up to 5 years after surgery, and the time to failure, were not influenced by patients' BMI, except for subjects affected by morbid obesity, but this group had a small sample size. Based on this evidence, however, it does not appear justified to give low priority to obese subjects for total knee arthroplasty, which would, as a result of restored ability to move, lead to weight loss. (Bordini, 2009) Obese patients presented for and underwent joint replacement surgery at a younger age as compared to nonobese patients. (Gandhi, 2010) Adverse events (eg, perioperative complications, post-op wound infections) occurred in 14.2% of the non-obese, 22.6% of the obese and 35.1% of the morbidly obese patients after total knee replacement. (Dowsey, 2010) A 2-year review of knee and hip replacement surgeries found that complication rates in obese patients were low, supporting doing the procedures even in the heaviest patients, but the review did show that hospital stays were longer in those who were obese than in those who were not. (Parks, 2010) Obese patients may have clinically significant

weight loss after total joint arthroplasty, since their osteoarthritis had limited their mobility and ability to exercise. When weight was corrected for natural gain, the overall study population had a trend toward weight loss, and 19.9% of the study population had clinically significant weight loss. (Stets, 2010)

Minimally invasive total knee arthroplasty: No significant benefit was seen in using a minimally invasive surgical technique over a standard traditional technique for total knee arthroplasty, but the study did not focus on quality-of-life outcomes (eg, length of hospital stay, reliance on pain medications, and the need for inpatient rehabilitation after discharge), in which the minimally invasive approach is purported to show an advantage. (Wülker, 2010)

### **ODG Indications for Surgery -- Knee arthroplasty:**

Criteria for knee joint replacement (If only 1 compartment is affected, a unicompartmental or partial replacement may be considered. If 2 of the 3 compartments are affected, a total joint replacement is indicated.):

1. Conservative Care: Medications. AND (Visco supplementation injections OR Steroid injection). PLUS
2. Subjective Clinical Findings: Limited range of motion. AND Nighttime joint pain. AND No pain relief with conservative care. PLUS
3. Objective Clinical Findings: Over 50 years of age AND Body Mass Index of less than 35, where increased BMI poses elevated risks for post-op complications. PLUS
4. Imaging Clinical Findings: Osteoarthritis on: Standing x-ray. OR Arthroscopy.

(Washington, 2003) (Sheng, 2004) (Saleh, 2002) (Callahan, 1995)

### **A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION:**

- ACOEM- AMERICAN COLLEGE OF OCCUPATIONAL & ENVIRONMENTAL MEDICINE UM KNOWLEDGEBASE
- AHCPR- AGENCY FOR HEALTHCARE RESEARCH & QUALITY GUIDELINES
- DWC- DIVISION OF WORKERS COMPENSATION POLICIES OR GUIDELINES
- EUROPEAN GUIDELINES FOR MANAGEMENT OF CHRONIC LOW BACK PAIN
- INTERQUAL CRITERIA
- MEDICAL JUDGEMENT, CLINICAL EXPERIENCE AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS
- MERCY CENTER CONSENSUS CONFERENCE GUIDELINES
- MILLIMAN CARE GUIDELINES
- ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES
- PRESSLEY REED, THE MEDICAL DISABILITY ADVISOR
- TEXAS GUIDELINES FOR CHIROPRACTIC QUALITY ASSURANCE & PRACTICE PARAMETERS
- TEXAS TACADA GUIDELINES
- TMF SCREENING CRITERIA MANUAL
- PEER REVIEWED NATIONALLY ACCEPTED MEDICAL LITERATURE (PROVIDE A DESCRIPTION)
- OTHER EVIDENCE BASED, SCIENTIFICALLY VALID, OUTCOME FOCUSED GUIDELINES (PROVIDE A DESCRIPTION)