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Notice of Independent Review Decision

DATE OF REVIEW: 7/27/09

IRO CASE #:

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE

Left Knee - total arthroplasty and hardware removal

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

Certified by The American Board of Orthopaedic Surgery

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)

Injury date	Claim #	Review Type	ICD-9 DSMV	HCPCS/ NDC	Upheld/ Overturned
		Prospective	716.16	20680	Upheld
		Prospective	716.16	27447	Upheld

INFORMATION PROVIDED TO THE IRO FOR REVIEW

Determination letters dated 5/4/09 and 6/4/09
Physician notes from 1/22/08 through 4/28/09
X-ray reports dated 1/17/08
Operative reports dated 1/23/08, 6/11/08

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PATIENT CLINICAL HISTORY:

The patient is a xx-year-old who is reported to have been struck by a car on xx/xx/xx. Records indicate that the patient was evaluated at a Medical Center and was subsequently seen at a local emergency room. Radiographic reports performed on this date show comminuted mildly displaced fracture at the lateral tibial plateau with involvement of the joint space. The remaining portion of the left tibia/fibula were unremarkable.

On the 01/22/08 evaluation the patient reports symptoms of popping inside the joint with range of motion. Previous treatment has consisted of a knee sleeve. She has swelling that occurs constantly. On physical examination the patient is 5'5" tall and weighs 214 pounds. She has tenderness present at the mid third of the lateral joint line, posterior third of the lateral joint line and mid third of the medial joint line. She has moderate effusion. Radiographs of the left leg show a severely depressed comminuted lateral tibial plateau fracture. The patient subsequently was recommended to undergo ORIF of the lateral plateau with bone grafting. The patient was taken to surgery on 01/23/08. Operative report indicates that the patient underwent open reduction and internal fixation of the left lateral tibial plateau fracture with major bone grafting. The patient additionally underwent a lateral meniscus repair.

On 01/29/08 the patient presented for follow up. On examination she has no unusual warmth. There is no wound breakdown or cellulitis. Her incisions are healing with no signs of infection. She has no findings consistent with a superficial or deep DVT. The patient was subsequently referred to physical therapy (PT) 3x week and she was provided oral medications.

The patient was seen in follow up on 02/25/08. Range of motion is reported to be from 30-60 degrees. She is neurologically intact. Her incision site is clean with Steri-strips intact. The patient was again continued in physical therapy.

The patient was seen in follow up in 05/22/08. The patient reports physical therapy did not help as she feels she wasn't given enough sessions. She reports no change in her symptoms. She reports her surgical outcome is fair. She reports pain levels of 4/10 which are aggravated by bending, moving and walking. On physical examination the patient's alignment is normal. She has a small effusion and her incisions are healed. Extension is to 25 degrees and flexion is to 70. Radiographs suggest a healing of the fracture with some anterior

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depression. The patient was assessed with a tibial plateau fracture with adhesions and partial ankylosis.

On 06/11/08 the patient was taken to surgery a second time. At this time the patient underwent an arthroscopic abrasion, arthroplasty and chondroplasty, partial synovectomy and removal of adhesions from multiple compartments, and a partial lateral meniscectomy.

On 06/30/08 the patient presented for post operative follow up. She reports that she still has pain since surgery but overall she feels better. She describes her surgical outcome as good. She reports her pain level to be 5/10. Her symptoms are aggravated with activity. On physical examination the patient has normal alignment with a small effusion. Her incision is well healed with no erythema. She has global left knee pain and tenderness and extension is to 10 degrees with flexion to 70 degrees. The patient was subsequently referred for additional PT.

On 09/09/08 the patient was seen in follow up. She is reported to have fallen in her home 2 days earlier as the result of slipping in water on the floor. She reports her pain level to be 4/10 and aggravated by activity. On examination the patient has global left knee pain and tenderness. Extension is to 20 degrees and flexion is to 100. She has mild atrophy and weakness of the quadriceps. Posterior drawer and Lachman's test are negative and varus and valgus stress are unremarkable. The patient was recommended for CT of the left knee and it is reported she may need a TKR in the future.

On 10/23/08 the patient is reported to have continued stiffness and pain that has not improved. CT scan was not approved on utilization review. The patient's pain is reported to be 5/10. On physical examination the patient has an antalgic gait with an extension lag. She has no evidence of DVT and her incisions are well healed. She has global knee tenderness. Extension is to -5 degrees and flexion is to 90. Muscle strength is reported to be normal and orthopedic tests are negative. The patient was recommended for a home exercise program, Dynasplint and she may need a TKR as hardware removal is not felt to be of benefit.

On 12/22/08 the patient presented for follow up. She complains of pain and stiffness and would like to have her plate removed. On physical examination her pain is graded as 5/10. Reflexes are 2+ and symmetric. The patient has an antalgic gait and normal alignment with a small effusion. Her incisions are well healed and there is no erythema. She has global left knee pain and tenderness. Extension is 15 degrees and flexion is 90 degrees. Stability testing is negative. The patient is to continue her home exercise program and follow up in 3 months.

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The patient was seen in follow up on 04/28/09. She continues to have left knee pain. She reports when she gets up she falls to the floor at times and she continues to have severe pain when walking with a limp and gets stiff when she sits for a long period of time. On physical examination her pain is reported to be graded as 6/10. She has an antalgic gait and normal alignment with a small effusion. She has negative Homan's sign. She has global pain at the lateral joint line. Range of motion is -2 in extension and 90 degrees in flexion. There is mild atrophy and weakness at the quadriceps and there is no instability of the ligamentous structures. Radiographs show a healed lateral plateau with joint surface irregularity. The patient was subsequently recommended to undergo a total knee replacement.

ANALYSIS AND EXPLANATION OF THE DECISION INCLUDING CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION

In the Reviewer's opinion, the request for left knee total arthroplasty and hardware removal is not medically necessary or supported by the submitted clinical information. The submitted clinical information indicates that the patient sustained a comminuted lateral tibial plateau fracture which resulted in an ORIF and lateral meniscus repair. Post operatively the patient had continued pain despite aggressive physical therapy. She subsequently was taken back to surgery on 06/11/08. At this time she underwent partial synovectomy and removal of adhesions as well as abrasion arthroplasty and chondroplasty and an arthroscopic lateral meniscectomy. Post operatively the patient has again failed to improve despite extensive conservative care. It is noted that there are discrepancies contained in the record regarding the patient's height and weight. It is reported that the patient is 5'1" and 230 pounds by designated doctor which would result in a BMI of 43.5 which exceeds current evidence based recommendations of 35. It was also reported that the patient is 5'5" tall and weighs 202 pounds which would result in a BMI of 33.6. This discrepancy in the reported records is significant and clearly has implications as to the potential success of the requested operative intervention. Additionally, it is noted that the records do not contain any standing radiographs or current imaging studies to establish whether the patient has tri compartmental osteoarthritis. There is no indication from the record that the patient underwent more conservative forms of therapy to include intraarticular corticosteroid injections or high uronic acid injections. Lastly, the patient is very young at xx years of age and current evidence based guidelines require the patient to be over 50 years of age. Given the totality of the clinical information presented, the patient would not be a candidate for left total knee arthroplasty under the Official Disability Guidelines.

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References:

The 2009 Official Disability Guidelines, 14th edition, The Work Loss Data Institute. Online edition.

Knee Chapter: Knee joint 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](#)) Unicompartmental knee replacement is effective among patients with knee OA restricted to a single compartment. ([Zhang, 2008](#)) 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](#)) 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 RCT, perioperative celecoxib (Celebrex) significantly improved postoperative resting pain scores at 48 and 72 hrs, opioid

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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](#)) 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](#)) 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. ([Petterson, 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

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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](#))

ODG Indications for Surgery™ -- Knee arthroplasty:

Criteria for knee joint replacement (If only 1 compartment is affected, a unicompartmental or partial replacement is indicated. 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. 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

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- 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)**