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Notice of Independent Review Decision

DATE OF REVIEW: 07/18/08

IRO CASE NO.:

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

Item in dispute: Anterior interbody fusion at L4-L5 lateral approach, posterior lumbar decompression with posterior lateral fusion and pedicle screw instrumentation at L4-L5

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

Board Certified Neurosurgeon

REVIEW OUTCOME

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

Denial Upheld

Anterior interbody fusion at L4-L5 lateral approach, posterior lumbar decompression with posterior lateral fusion and pedicle screw instrumentation at L4-L5 is not medically necessary.

PATIENT CLINICAL HISTORY (SUMMARY):

The employee is a xx year old male who was reported to have sustained injuries as a result of a motor vehicle accident occurring on xx/xx/xx. On the date of injury, he was reported to have hit a guardrail at approximately forty miles per hour and his truck rolled onto its side. The employee denied any loss of consciousness. He had complaints of rib and back pain and was ambulatory at arrival. The employee was reported to have been the driver and was restrained with a lap belt and shoulder harness. The airbag did not deploy, and he did not impact the windshield.

The employee's past medical history was reported to have been positive for a lumbar fusion performed twenty years earlier.

The employee was evaluated at the on the date of injury. Upon examination, respirations were even and unlabored. His airway was patent. The employee reported pain with coughing and respiration. He was able to move all his extremities. The employee was noted to be anxious and grimacing with movement. Radiographs of the lumbar spine were reported to reveal no evidence of fracture. Radiographs of the right

ribs revealed a mildly displaced fracture of the right 9th rib with evidence of callus formation suggesting that the fracture was subacute. No other right rib fracture was identified.

The employee was seen in follow up by Dr. , his primary care provider. The records indicate that the employee was referred for an MRI of the lumbar spine secondary to low back pain radiating into the right buttocks on 08/09/07. This study reported a mild anterior compression deformity at the level of T12 with minimal edema signal along the anteroinferior aspect of the vertebral body. The spinal cord signal was normal. At L1-L2 through L3-L4, there were no significant disc herniations or stenosis. At L4-L5, there was a 3 mm broad-based posterior and biforaminal bulging of the annulus. There was mild effacement of the ventral thecal sac without significant stenosis centrally. At L5-S1, there was a 2 mm broad-based posterior bulging of the annulus without significant central canal stenosis. The employee was status post a posterior fusion.

On 09/10/07, the employee was referred to Dr. The employee complained of upper and lower back pain since xx/xx/xx. He reported he was involved in a motor vehicle accident. He rated his pain as 10/10. He stated his pain was 50% in his back and 50% in his leg. Socially, the employee was reported to smoke one and one-half packs of cigarettes per day. The employee was noted to be 6 feet 1 inch in height and weighed 210 pounds. He had a normal standing balance. His pelvis and shoulders were level. He was alert and oriented. He appeared his stated age. He had normal coordination. He was able to walk, but with heel walk he had moderate difficulty. He had a 1+ left ankle reflex, absent right ankle reflex, and 2+ at the patella bilaterally. Straight leg raising was positive bilaterally. He had full motor strength in his upper extremities. Imaging studies were reviewed. The employee was diagnosed with an annular tear at L3-L4, lumbar stenosis and a history of a previous lumbar surgery. It was recommended that the employee be referred for CT scan.

On 09/13/07, the employee underwent lumbar myelography with post myelogram CT. This study reported no disc herniation, significant bulging, or central canal or neural foraminal stenosis at L1-L2. The facet joints were within normal limits. At L2-L3, there was no disc herniation or significant bulging. There was no central canal or foraminal stenosis. The facet joints were within normal limits. At L3-L4, there were no disc herniations or significant bulging. There was no central canal or foraminal stenosis. Facet joints were within normal limits. At L4-L5, there was mild anterior endplate spurring. There was a 3 mm disc bulge effacing the ventral thecal sac. There was no definite focal disc herniation or nerve root compromise. There was no significant central canal stenosis. The neural foramina and subarticular process appeared adequate bilaterally. There was mild facet hypertrophy noted. At L5-S1, there was evidence of a previous bilateral posterolateral fusion and osseous fusion mass noted adjacent to the posterior elements extending from the L5 to S1 level on the right and left. This osseous fusion mass appeared to be incorporated into the posterior elements of S1. However, there was a thin linear zone of lucency between the osseous fusion mass and the posterior elements of L5, although the osseous fusion mass did appear to be partially incorporated through the posterior elements of L5 on the left. There was no disc herniation or significant bulging at that level. There was no central canal or foraminal stenosis. There was no evidence of a lumbar compression fracture or spondylolisthesis. It was reported that there were transverse process fractures noted on the right at L3 and L4. At both levels, there was evidence of callus formation surrounding the fracture site indicating these were chronic and partially healed. The myelogram reported a mild ventral extradural impression upon the lumbar thecal sac at

the L4-L5 level. There was no significant central canal stenosis at any level. There was no myelographic evidence of lumbar nerve root sleeve impingement.

The employee continued to experience low back pain and was subsequently referred to Dr. on 09/24/07. This note indicated that the employee was under the care of , D.C. Dr. noted the employee's history. Plain radiographs were performed including flexion and extension which reveal four free lumbar vertebra with probable fusion of the segment at L5-S1 bilaterally or sacralization process. There was definitive disc space narrowing at L5-S1. There was evidence of fractured right transverse processes at L3 and L4. On physical examination, the employee had reduced lumbar range of motion. Paraspinal muscle guarding was noted bilaterally right greater than left. Extension and rotation was inconclusive as the employee guards profoundly when attempting to rotate. Tenderness was present bilaterally right greater than left as well as down the midline. There were posterior scars. In the seated position, deep tendon reflexes were equal and reactive at the knees and ankles. Straight leg raise was positive on the right with reproduction of symptoms from the low back to all five toes. Lasegue's test was positive bilaterally right greater than left with reproduction from the ipsilateral hamstring to all five toes. Motor strength was graded as 5/5 of the EHL and 4/5 in the right dorsi/evertors. The employee was diagnosed with lumbar radicular syndrome status post prior posterior fusion L5-S1, possible chronic fractures of the right transverse processes of L3, L4 and possible pseudoarthrosis at L5-S1. Dr. recommended that the employee undergo a caudal epidural steroid injection.

On 10/18/07, the employee underwent a caudal epidural steroid injection. A second block was performed on 10/18/07. On 10/02/07, the employee was referred for behavioral medicine consultation. This report indicated that the employee was cooperative throughout his interview. He demonstrated psychomotor retardation with slow movements. His intellectual functioning was normal. His mood was dysthymic and anxious. His affect was constricted. The employee was diagnosed with a major depressive disorder single episode, and it was recommended that he receive authorization for participation in low level individual psychotherapy. The employee's Beck Depression Inventory was reported to be 22 indicating moderate depression and his Beck Anxiety Inventory was reported to be 14 reflecting mild anxiety.

On 10/26/07, the employee was referred for electrodiagnostic studies. The EMG portion of this study was normal and reported no evidence of a radiculopathy. The employee had abnormal nerve conduction velocities with a reported prolonged left tibial f-wave latency and prolonged distal latency of both tibial nerves.

The employee was seen in follow up by Dr. on 11/02/07. At that time, he was reported to have previously undergone a week worth of physical therapy with no benefit. The employee was status post caudal epidural steroid injection which provided 10%-15% relief immediately following the injection, and he subsequently returned to baseline later that day. Dr. recommended that the employee undergo lumbar discography.

On 11/30/07, the employee was again referred for presurgical psychological testing. The result of this evaluation was a recommendation that the employee be evaluated for psychopharmacologic treatment, especially appropriateness for the use of antidepressant therapy. Psychiatric management may stabilize depressive symptoms. Despite this, Dr. found that the employee was cleared for discography.

On 12/21/07, the employee underwent lumbar discography. At the L3-L4 level, the employee reported pain which he graded as 5/10 which was located on the left lower

back and was considered nonconcordant. The disc was reported to have had a normal appearance. At L4-L5, the employee reported pain which he graded as 5/10 distributed in the lower back and right side and was reported to be concordant with his usual complaint. A posterior annular fissure was evident. At L5-S1, the employee reported pain which he graded as 8/10 distributed in his low back and right side and right hip. This was most like his usual pain and was considered concordant. The post discography CT reported at L3-L4 fractures were identified in the transverse process. The fracture through the right L3 transverse process was not healed. There appeared to be some partial healing of the fracture through the right L4 transverse process. Contrast material was seen in the nuclear cavity, and there was no annular fissure at this level. At L4-L5, there was a broad-based bulge protrusion present which appeared to migrate inferiorly slightly behind the body of L5. Contrast material was seen in the nuclear cavity and extended up to the annular periphery posteriorly along its right posterolateral and right lateral aspects. This constituted a Grade 4 fissure. No extra-annular leakage was identified. At L5-S1, a small amount of injected contrast material was present in the right posterolateral portion of the disc. There appeared to be some posterior annular contrast related to an annular fissure.

The employee was referred for an Independent Medical Evaluation (IME) on 01/07/08. This was performed by Dr. . Dr. noted looking at the films that there was a linear zone of lucency between the osseous fusion mass and posterior elements of L5. He did not have any flexion or extension films. He noted that Dr. had suggested performing a two level fusion, reported that the employee had a discogram performed, and opined this was not really effective for ruling the situation. He opined that performing a two level fusion based on discography alone was somewhat careless. Dr. noted that the employee had five positive Waddell's tests which included non-anatomical deep tenderness, low back pain on vertical loading, back pain on passive rotation of shoulder and pelvis in the same plane, more than 30 degrees difference in straight leg raising in sitting versus supine, and stocking glove sensory disturbances.

The records contain a utilization review determination dated 01/16/08. The request was for two level anterior interbody fusion at L4-L5 and L5-S1. This case was reviewed by Dr. who opined that the employee was a poor operative candidate secondary to three level disease, psychological issues and being a high risk fusion candidate because of nicotine exposure. This was subsequently appealed by Dr. and a second review was performed on 01/23/08. At the time this case was reviewed by Dr. Dr. opined that surgery was not recommended as medically necessary. He reported that the employee was noted to have sustained an injury to the low back secondary to a motor vehicle accident in xx/xxxx. He noted that the employee had a remote history of a previous posterior fusion at L5-S1 performed in 1989. There was evidence of pseudoarthrosis at this level. He reported that the employee underwent psychological evaluation on 11/30/07. Despite findings significant for a major depressive disorder, the employee was cleared for discography. The previous reviewer noted that the employee had three level degenerative disc disease and noted that the employee had a significant history of one pack per day of smoking. He found that the requested procedure was not medically necessary.

On 04/15/08, the employee was seen by Dr. . The employee was reported to be status post extensive physical therapy and epidural steroid injection with no significant improvement. He reported that the employee had low back pain with radiation to the

bilateral lower extremities right greater than left. He noted the employee was a one pack per day smoker. On physical examination, lumbar range of motion was decreased in forward flexion secondary to pain. Motor examination revealed 4/5 strength in the tibialis anterior and the EHL on the right; otherwise 5/5 throughout. Deep tendon reflexes were 2+ throughout and symmetrical. Plantar responses were flexor bilaterally. Gait was antalgic. The employee had difficulty with heel walking, less difficulty with toe walking and no difficulty with tandem gait. Sensory revealed a hypoesthetic region in the L5 distribution on the right to pinprick and light touch. MRI of the lumbar spine was reviewed. Dr. recommended that the employee undergo anterior interbody fusion at L4-L5 using a lateral approach with posterior lumbar decompression with posterolateral fusion and pedicle screw instrumentation at L4-L5.

On 04/30/08, the employee was referred for psychiatric evaluation. At that time, the employee was reported to have a Beck Depression Inventory of 6 and a Beck Anxiety Inventory of 7. The evaluator found that the employee was a suitable candidate for operative intervention. Dr. subsequently submitted a request for anterior lumbar interbody fusion at L4-L5.

On 05/12/08, this request was reviewed by Dr. . Dr. opined that anterior lumbar interbody fusion at L4-L5 with lateral approach with posterior lumbar decompression and posterolateral fusion and pedicle screw instrumentation at L4-L5 was not certified at that time. He recommended that the employee undergo an independent psychiatric evaluation given that the employee was cleared for discography despite findings significant for a major depressive disorder. He reported the employee had invalid discography given that there were no true negative control levels, and the employee had multilevel degenerative disc disease. He further reported the employee was noted to have a history significant for one pack per day smoking. He recommended that the employee undergo further evaluation and opined that the employee had not met the guidelines for surgical intervention.

On 05/19/08, , D.C., submitted a letter of appeal. It was reported that the employee had been cleared psychologically and had been free of nicotine use for the past three to four weeks. He opined that the employee was an appropriate candidate for surgery since the prior concerns regarding psychiatric issues and nicotine use had been addressed.

Dr. submitted an appeal on 05/30/08. This appeal was reviewed by Dr. . Dr. indicated a peer conversation was conducted with Dr. , D.C., an associate of Dr. . He reported that it appeared from the discussions the indications for surgery were largely due to this gentleman's subjective complaints of back pain. He reported there were no signs of demonstrable instability on any of the imaging studies. There were no reports of progressive neurologic deficit. On the basis of this information, he found that the request was not medically necessary. He further reported that it did not appear that all pain generators had potentially been identified, and in this particular setting where this individual appeared to have pain at each level tested on discography, this would invalidate the test as a potential tool to determine the pain generator. He reported, based on that information alone, surgical fusion could not be recommended as necessary in this particular case.

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

Based upon the available medical records, the employee was reported to have sustained an injury to his low back on xx/xx/xx after being involved in a motor vehicle accident. The available medical records indicate that the employee has a past medical history of a previous lumbar fusion at L5-S1.

The employee has undergone extensive conservative care consisting of oral medications, physical therapy, chiropractic treatments and caudal epidural steroid injections with no subjective improvement in his condition. The employee has undergone CT myelography which demonstrated a 3 mm generalized disc bulge at L4-L5 with no definite focal disc herniation or nerve root compression. The neural foramina and subarticular recesses appear adequate bilaterally. There was mild facet joint hypertrophy noted. At L5-S1, the employee is status post a previous bilateral posterolateral fusion with some evidence of breakdown or possible fracture of the fusion mass. This study reported no evidence of spondylolisthesis and reported transverse process fractures were noted on the right at the L3-L4 levels. Myelographically, there was no evidence of nerve root sleeve impingement. The employee has undergone electrodiagnostic studies. The EMG was negative for lumbar radiculopathy. The employee has previously received treatment from Dr. who performed two caudal epidural steroid injections, which provided the employee no relief. Records indicate that the employee subsequently was found to have a major depressive disorder. It appears from the records that he received treatment with reductions noted in both his Beck Depression Inventory and Beck Anxiety Inventory. The employee has a long history of tobacco use.

The employee eventually underwent lumbar discography on 12/21/07. This study noted pain at all three levels tested with concordant pain reported to be at the L4-L5 and L5-S1 level. Disc morphology was reported to be abnormal at the L4-L5 and L5-S1 levels. It has recently been reported that the employee has eliminated use of tobacco products and was successful in smoking cessation.

This case has recently been reviewed by Dr. who opined that operative intervention is not medically necessary in that the employee had invalid discography and has multilevel degenerative disc disease. At the time of evaluation, the employee was utilizing tobacco products, and Dr. felt that the employee would be a poor risk for operative intervention. This case was subsequently reviewed a second time by Dr. Dr. noted that the employee had no instability on imaging studies and that the employee was largely being treated for subjective back pain. He further questioned the validity of the employee's lumbar discography. He further indicated that the potential pain generators have not been clearly identified.

I would concur with the two previous reviewers in that the requested operative intervention is not supported by the current data submitted. The employee continues to experience low back pain despite conservative treatment. He was noted to have comorbid psychological issues which have been addressed. The employee has a longstanding history of smoking and is reported to have completed a smoking cessation program. However, the submitted imaging studies do not establish that the employee

has instability at any level. The report of discography is invalid in that the employee has not had a negative control disc and that the employee reported pain at all tested levels. Additionally the record does not provide any indication that the posterior elements were ruled out as a potential cause for the employee's continued low back pain. The employee has subjective reports of radiation into the lower extremities; however, he has undergone electrodiagnostic studies which show no evidence of a lumbar radiculopathy. Based on these findings it would be my opinion that the requested procedure has not been established as medically necessary for this employee.

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

1. The **Official Disability Guidelines**, 11th Edition, The Work Loss Data Institute.
2. The American College of Occupational and Environmental Medicine Guidelines; Chapter 12.
3. Deyo RA, Nachemson A, Mirza SK, Spinal-fusion surgery - the case for restraint, *N Engl J Med*. 2004 Feb 12;350(7):722-6
4. Gibson JN, Waddell G. Surgery for degenerative lumbar spondylosis: updated Cochrane Review. *Spine*. 2005 Oct 15;30(20):2312-20.
5. Atlas SJ, Delitto A. Spinal Stenosis: Surgical versus Nonsurgical Treatment. *Clin Orthop Relat Res*. 2006 Feb;443:198-207.
6. Resnick DK, Choudhri TF, Dailey AT, Groff MW, Khoo L, Matz PG, Mummaneni P, Watters WC 3rd, Wang J, Walters BC, Hadley MN; American Association of Neurological Surgeons/Congress of Neurological Surgeons. Guidelines for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 7: intractable low-back pain without stenosis or spondylolisthesis. *J Neurosurg Spine*. 2005 Jun;2(6):670-2.