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DATE: 4/05/2016

IRO CASE #:

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

MRI of the Lumbar spine

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

The reviewer is certified by the American Board of Orthopedic Surgery and has over 18 years of experience.

REVIEW OUTCOME:

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

Overturned (Disagree)

Provide a description of the review outcome that clearly states whether medical necessity exists for each of the health care services in dispute.

PATIENT CLINICAL HISTORY [SUMMARY]:

The claimant is a gentleman whom injured himself on the job while shoveling snow on XX/XX/XX. He slipped on some ice that was covered by snow and twisted his back.

XX/XX/XX: X-ray Lumbar spine- AP, lateral, bilateral oblique, and coned down lateral views of the lumbar spine.

Conclusion: Prominent degenerative disc disease at L5-S1. No fracture. Mild diffuse spondylosis.

XX/XX/XX: MRI Lumbar Spine WO- **Conclusion:** 1. Bilateral L5 spondylosis and grade I spinal Listhesis, L5-S1 dorsal bulge. There is severe bilateral foraminal stenosis with compression of both L5 nerve roots in the foramen.

2. Additional degenerative changes.

XX/XX/XX: X-rays of Lumbar Spine- **Impression:** 1. There is a 19mm anterolisthesis of L5 on S1 which is stable between the flexion and extension views. 2. Narrowing of L5-S1 disc space.

XX/XX/XX: Patient was seen in the office. Patient was noted to have difficulty acquiring a full upright position when getting out of his chair. No viable scar on the area of interest. He stands erect. His gait is balanced. His gait is slow and purposeful. Lumbar range of motion is painful and restricted to the following: flexion is painful at 75% of normal, extension is painful at 75% of normal. Spinous processes are tender at the lower region. Straight leg raises are normal on the right side. Straight leg raises on the left are positive at 45 degrees. Pain with straight leg raise is located at back. It was recommended at this visit to have lumbar physical therapy.

XX/XX/XX: OP report for Bilateral L5 Transforaminal Epidural Steroid Injection. Postoperative Diagnosis: __724.02 Spinal stenosis of lumbar region without neurogenic claudication. 724.4 thoracic or lumbosacral neuritis or radiculitis, unspecified. 738.4 Acquired spondylolisthesis. Procedure Performed: Bilateral L5 tranforaminal epidural Steroid Injection

XX/XX/XX: Patient is 1 month follow-up s/p LE TF ESI. He stated that he initially had great improvement but it only relieved his symptoms for 1 day. Patients back pain and leg numbness have gotten progressively worse. Patient has L5-S1 spondylolisthesis with foraminal stenosis. Need for surgery to decompress the progressing foraminal stenosis. Patient has exhausted conservative therapy. Discussed surgical risks with patient and he is agreeable with surgical plan.

XX/XX/XX: BME done states that patient is clear for surgery based on his presurgical psychological screening.

XX/XX/XX: Patient presents for a follow-up visit regarding his low back pain. He appears to be in pain. Lumbar range of motion is painful and restricted to the following: flexion is painful at 15% of normal, extension is painful at 15% of normal. Straight leg raise is positive on the right side and left side at 90 degrees. X-rays of lumbar spine were performed in office showing spondylolisthesis of L4 on L5 measuring 4.5mm, more so at L5 on S1 measuring 18.7mm. On exam, he has bilateral seated straight leg raise. Very limited ROM of lumbar spine. Bilateral LE weakness: bilateral Tib ant weakness. The plan for today's visit is additional imaging to further evaluate his lumbar spine etiology. Plan: MRI Lumbar Spine.

XX/XX/XX: UR. Rationale: Presently for the described medical situation, ODG would not support a medical necessity for this specific request. It is documented that previous diagnostic testing including an MRI of lumbar. A recommendation was previously made for surgical intervention to the lumbar spine. The records available for review do not identify the presence of any new changes on the neurological examination compared to the previous. Based on the records available for review, medical necessity for this specific request is not established.

XX/XX/XX: UR. Rationale: The previous noncertification was due to lack of new or concerning findings on physical exam to warrant an additional MRI. Additional documentation was not submitted. The previous noncertification is supported.

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

The previous adverse decision is overturned. The lumbar spine MRI is approved.

The patient's care has been focused on the L5-S1 spondylolisthesis. He has already completed bilateral L5 transforaminal epidural steroid injections at this level, with temporary pain relief.

The patient's physical examination has deteriorated from the XX/XXXX-XX/XXXX. The XX/XXXX office note indicated weakness in bilateral tibialis anterior muscle groups (L4 nerve), which was not documented previously. In XX/XXXX, the patient had a positive straight leg raise sign in the left leg only. In the XX/XXXX he had a positive straight leg raise sign in both legs.

The recent lumbar radiographs demonstrated spondylolisthesis at L4-5, which was not identified on the MRI or prior radiographs. An up-to-date MRI of the lumbar spine could determine whether there is true pathology at L4-5 to account for the tibialis anterior weakness. This information would be necessary prior to surgical consideration.

The requested MRI is medically necessary.

MRI's (magnetic resonance imaging)

Recommended for indications below. MRI's are test of choice for patients with prior back surgery, but for uncomplicated low back pain, with radiculopathy, not recommended until after at least one month conservative therapy, sooner if severe or progressive neurologic deficit. Repeat MRI is not routinely recommended, and should be reserved for a significant change in symptoms and/or findings suggestive of significant pathology (eg, tumor, infection, fracture,

neurocompression, recurrent disc herniation). ([Bigos, 1999](#)) ([Mullin, 2000](#)) ([ACR, 2000](#)) ([AAN, 1994](#)) ([Aetna, 2004](#)) ([Airaksinen, 2006](#)) ([Chou, 2007](#))

Magnetic resonance imaging has also become the mainstay in the evaluation of myelopathy. An important limitation of magnetic resonance imaging in the diagnosis of myelopathy is its high sensitivity. The ease with which the study depicts expansion and compression of the spinal cord in the myelopathic patient may lead to false positive examinations and inappropriately aggressive therapy if findings are interpreted incorrectly. ([Seidenwurm, 2000](#)) There is controversy over whether they result in higher costs compared to X-rays including all the treatment that continues after the more sensitive MRI reveals the usual insignificant disc bulges and herniations. ([Jarvik-JAMA, 2003](#)) In addition, the sensitivities of the only significant MRI parameters, disc height narrowing and annular tears, are poor, and these findings alone are of limited clinical importance. ([Videman, 2003](#))

Imaging studies are used most practically as confirmation studies once a working diagnosis is determined. MRI, although excellent at defining tumor, infection, and nerve compression, can be too sensitive with regard to degenerative disease findings and commonly displays pathology that is not responsible for the patient's symptoms. With low back pain, clinical judgment begins and ends with an understanding of a patient's life and circumstances as much as with their specific spinal pathology. ([Carragee, 2004](#)) Diagnostic imaging of the spine is associated with a high rate of abnormal findings in asymptomatic individuals. Herniated disk is found on magnetic resonance imaging in 9% to 76% of asymptomatic patients; bulging disks, in 20% to 81%; and degenerative disks, in 46% to 93%. ([Kinkade, 2007](#)) Baseline MRI findings do not predict future low back pain. ([Borenstein, 2001](#)) MRI findings may be preexisting. Many MRI findings (loss of disc signal, facet arthrosis, and end plate signal changes) may represent progressive age changes not associated with acute events. ([Carragee, 2006](#)) MRI abnormalities do not predict poor outcomes after conservative care for chronic low back pain patients. ([Kleinstück, 2006](#)) The new ACP/APS guideline as compared to the old AHCPDR guideline is more forceful about the need to avoid specialized diagnostic imaging such as magnetic resonance imaging (MRI) without a clear rationale for doing so. ([Shekelle, 2008](#))

A new meta-analysis of randomized trials finds no benefit to routine lumbar imaging (radiography, MRI, or CT) for low back pain without indications of serious underlying conditions, and recommends that clinicians should refrain from routine, immediate lumbar imaging in these patients. ([Chou-Lancet, 2009](#)) Despite guidelines recommending parsimonious imaging, use of lumbar MRI increased by 307% during a recent 12-year interval. When judged against guidelines, one-third to two-thirds of spinal computed tomography imaging and MRI may be inappropriate. ([Deyo, 2009](#)) As an alternative to MRI, a pain assessment tool named Standardized Evaluation of Pain (StEP), with six interview questions and ten physical tests, identified patients with radicular pain with high sensitivity (92%) and specificity (97%). The diagnostic accuracy of StEP exceeded that of a dedicated screening tool for neuropathic pain and spinal magnetic resonance imaging. ([Scholz, 2009](#)) Clinical quality-based incentives are associated with less advanced imaging, whereas satisfaction measures are associated with more rapid and advanced imaging, leading Richard Deyo, in the Archives of Internal Medicine to call the fascination with lumbar spine imaging an idolatry. ([Pham, 2009](#)) Primary care physicians are making a significant amount of inappropriate referrals for CT and MRI, according to new research published in the *Journal of the American College of Radiology*. There were high rates of inappropriate examinations for spinal CTs (53%), and for spinal MRIs (35%), including lumbar spine MRI for acute back pain without conservative therapy. ([Lehnert, 2010](#)) Degenerative changes in the thoracic spine on MRI were observed in approximately half of the subjects with no symptoms in this study. ([Matsumoto, 2010](#)) This large case series concluded that iatrogenic effects of early MRI are worse disability and increased medical costs and surgery, unrelated to severity. ([Webster, 2010](#))

Routine imaging for low back pain is not beneficial and may even be harmful, according to new guidelines from the American College of Physicians. Imaging is indicated only if they have severe progressive neurologic impairments or signs or symptoms indicating a serious or specific underlying condition, or if they are candidates for invasive interventions. Immediate imaging is recommended for patients with major risk factors for cancer, spinal infection, cauda equina syndrome, or severe or progressive neurologic deficits. Imaging after a trial of treatment is recommended for patients who have minor risk factors for cancer, inflammatory back disease, vertebral compression fracture, radiculopathy, or symptomatic spinal stenosis. Subsequent imaging should be based on new symptoms or changes in current symptoms. (Chou, 2011) The National Physicians Alliance compiled a "top 5" list of procedures in primary care that do little if anything to improve outcomes but excel at wasting limited healthcare dollars, and the list included routinely ordering diagnostic imaging for patients with low back pain, but with no warning flags, such as severe or progressive neurologic deficits, within the first 6 weeks. (Aguilar, 2011) Owning MRI equipment is strongly correlated with patients receiving MRI scans, and having an MRI scan increases the probability of having surgery by 34%. (Shreibati, 2011) A considerable proportion of patients may be classified incorrectly by MRI for lumbar disc herniation, or for spinal stenosis. Pooled analysis resulted in a summary estimate of sensitivity of 75% and specificity of 77% for disc herniation. (Wassenaar, 2011) (Sigmundsson, 2011) Accurate terms are particularly important for classification of lumbar disc pathology from imaging. (Fardon, 2001) (Fardon, 2014) Among workers with LBP, early MRI is not associated with better health outcomes and is associated with increased likelihood of disability and its duration. (Graves, 2012) There is support for MRI, depending on symptoms and signs, to rule out serious pathology such as tumor, infection, fracture, and cauda equina syndrome. Patients with severe or progressive neurologic deficits from lumbar disc herniation, or subjects with lumbar radiculopathy who do not respond to initial appropriate conservative care, are also candidates for lumbar MRI to evaluate potential for spinal interventions including injections or surgery. For unequivocal evidence of radiculopathy, see AMA Guides. (Andersson, 2000) MRI with and without contrast is best test for prior back surgery. (Davis, 2011) See also [ACR Appropriateness Criteria™](#). See also [Standing MRI](#).

Recent research: More than half of requests for MRI of the lumbar spine are ordered for indications considered inappropriate or of uncertain value, pointing to evidence of substantial overuse of lumbar spine MRI scans. For family physicians, only 34% of their MRI scans were considered appropriate vs 58% of those ordered by other specialties. On the other hand, the vast majority of MRIs ordered for headaches, 83%, were deemed appropriate. (Emery, 2013) This study casts doubt on the value of post-op spinal imaging for patients with sciatica, because it could not distinguish those with a favorable clinical outcome from those with persistent symptoms. Disk herniation was visible in 35% of patients with a favorable outcome and in 33% with an unfavorable outcome, and nerve root compression was present in 24% of those with a favorable outcome and in 26% of those with an unfavorable outcome. They concluded that the MRI scan does not have any discriminatory power at all. Irrelevant findings have the potential to frighten patients and initiate cascades of unnecessary testing or intervention, with occasional risks. The study showed that neither a herniated disk nor the presence of scar tissue on MRI was associated with patient outcome, but these findings may lead to unnecessary further imaging and surgery. (el Barzouhi, 2013) A *JAMA* article on worsening trends for low back treatment found that there was an escalation in the use of MRI or CT, from 7.2% in 1999 to 11.3% in 2010, while imaging in the acute care setting provides neither clinical nor psychological benefit to patients with routine back pain. The general feeling among physicians was that patients may equate getting MRIs with being synonymous with good medical care, which could drive doctors to try to improve patient satisfaction. (Mafi, 2013) Clinicians should be aware of the diagnostic limitations of MRI as there is significant variability in the interrater and intrarater agreements of MRI in assessing different degenerative conditions of the lumbar spine. (Fu, 2014) The impact of

nonadherent early MRI includes a wide variety of expensive and potentially unnecessary services, and occurs relatively soon post-MRI, with early MRI having as much as 55 times the likelihood of advanced imaging, injections, and surgery within six months post-MR. ([Webster, 2014](#))

Indications for imaging -- Magnetic resonance imaging:

- Thoracic spine trauma: with neurological deficit
- Lumbar spine trauma: trauma, neurological deficit
- Lumbar spine trauma: seat belt (chance) fracture (If focal, radicular findings or other neurologic deficit)
- Uncomplicated low back pain, suspicion of cancer, infection, other “red flags”
- Uncomplicated low back pain, with radiculopathy, after at least 1 month conservative therapy, sooner if severe or progressive neurologic deficit.
- Uncomplicated low back pain, prior lumbar surgery
- Uncomplicated low back pain, cauda equina syndrome
- Myelopathy (neurological deficit related to the spinal cord), traumatic
- Myelopathy, painful
- Myelopathy, sudden onset
- Myelopathy, stepwise progressive
- Myelopathy, slowly progressive
- Myelopathy, infectious disease patient
- Myelopathy, oncology patient
- Repeat MRI: When there is significant change in symptoms and/or findings suggestive of significant pathology (eg, tumor, infection, fracture, neurocompression, recurrent disc herniation)

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)**