5068 West Plano Parkway Suite 122
Plano, Texas 75093
Phone: (972) 931-5100

DATE OF REVIEW: 02/22/2010

IRO CASE #:

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

Inpatient length of stay (2), anterior cervical discectomy, cervical corpectomy, microdissection technique, discography (C6-7), cervical arthrodesis, application of intervertebral biomechanical device, bone graft, anterior cervical instrumentation, reduction of subluxation (cervical C6-7)

A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION:
This case was reviewed by a Texas licensed MD, specializing in Orthopedic Surgery. The physician advisor has the following additional qualifications, if applicable:

ABMS Orthopaedic Surgery

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

☒ Upheld

Health Care Service(s) in Dispute	CPT Codes	Date of Service(s)	Outcome of Independent Review
Inpatient length of stay (2), anterior cervical discectomy, cervical corpectomy, microdissection technique, discography (C6-7), cervical arthrodesis, application of intervertebral biomechanical device, bone graft, anterior cervical instrumentation, reduction of subluxation (cervical C6-7)	63075, 63081, 63082, 69990, 62290, 22554, 22851, 20938, 22845, 22326-52	-	Upheld

INFORMATION PROVIDED TO THE IRO FOR REVIEW:

No	Document Type	Provider or Sender	Page Count	Service Start Date	Service End Date
1	Designated Doctor Report	DO	5	11/07/2008	11/07/2008
2	Diagnostic Test	Neurodiagnostic	2	03/20/2009	03/20/2009

		Associates			
3	Diagnostic Test	Radiological Association	3	04/04/2008	06/05/2008
4	IRO Request		7	02/02/2010	02/02/2010
5	Office Visit Report	Pain Management Physicians	8	03/05/2009	12/10/2009
6	Office Visit Report	MD PA	3	05/25/2009	05/26/2009
7	Psych Evaluation	Chronic Pain Management	6	11/18/2009	11/18/2009
8	IRO Record Receipt	TDI DWC	5	02/02/2010	02/02/2010
9	Initial Denial Letter	nsurance Company	16	01/19/2010	02/03/2010

PATIENT CLINICAL HISTORY [SUMMARY]:

The patient is a male who suffered a direct blow injury to the cervical spine when a piece fell on him, knocking him to the ground on xx/xx/xx. His initial symptoms were cervical pain which radiating into shoulders. Subsequently, he developed thoracic and lumbar pain. Lumbar pain radiated into lower extremities. An MRI scan performed 06/5/2008 revealed mild degenerative disc bulging C3-C4 and C6-C7. There was no suggestion of neurocompressive circumstances. A Designated Doctor evaluation was performed 11/07/2008 revealing no physical findings suggestive of cervical radiculopathy. Deep tendon reflexes in both upper extremities were present without asymmetry. Motor and sensory examinations failed to reveal deficits. Symptoms of pain were unresponsive to physical therapy and NSAIDS. Epidural steroid injections were performed and effective. A physical examination 04/30/2009 suggested biceps reflex right 1+. This is the only suggestion of reflex asymmetry. A cervical spine series of x-rays including flexion and extension lateral x-rays were reported to reveal 13 degrees of combined extension/flexion motion.

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

A request was submitted to pre-approve anterior cervical discectomy, possible corpectomy, micro dissection technique, cervical arthrodesis, discography, bone graph, reduction of C6-C7 subluxation and cervical arthrodesis with cages and bioabsorbable plates and screws. The request has been considered and denied, reconsidered and denied. An independent review has been requested. The applicable passages from the ODG, 2010, neck and upper back chapter are cited above. It does not appear that medical necessity for the requested preauthorization surgical procedure has been established. There is no clear documentation of symptomatic cervical instability. The current literature suggests the flexion/extension combined angle motion can be as much as 17 degrees. It appears that the prior denials were appropriate and should be upheld.

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

Fusion, anterior cervical	Recommended as an option in combination with anterior cervical discectomy for approved indications, although current evidence is conflicting about the benefit of fusion in general. (See Discectomy/laminectomy/laminoplasty.) Evidence is also conflicting as to whether autograft or allograft is preferable and/or what specific benefits are provided with fixation devices. Many patients have been found to have excellent outcomes while undergoing simple discectomy alone (for one- to two-level procedures), and have also been found to go on to develop spontaneous fusion after an anterior discectomy. (Bertalanffy, 1988) (Savolainen, 1998) (Donaldson, 2002) (Rosenorn, 1983) Cervical fusion for degenerative disease resulting in axial neck pain and no radiculopathy remains controversial and conservative therapy remains the choice if there is no evidence of instability. (Bambakidis, 2005) Conservative anterior cervical fusion techniques appear to be equally effective compared to techniques using allografts, plates or cages. (Savolainen, 1998) (Dowd, 1999) (Colorado, 2001) (Fouyas-Cochrane, 2002) (Goffin, 2003) Cervical fusion may demonstrate good results in appropriately chosen patients with cervical spondylosis and axial neck pain. (Wieser, 2007) This evidence was substantiated in a recent Cochrane review that stated that hard evidence for the need for a fusion procedure after discectomy was lacking, as outlined below: *(1) Anterior cervical discectomy compared to anterior cervical discectomy with*

	interbody fusion with a bone graft or substitute: Three of the six randomized controlled studies discussed in the 2004 Cochrane review found no difference between the two techniques and/or that fusion was not necessary. The Cochrane review felt there was conflicting evidence of the relative effectiveness of either procedure. Overall it was noted that patients with discectomy only had shorter hospital stays, and shorter length of operation. There was moderate evidence that pain relief after five to six weeks was higher for the patients who had discectomy with fusion. Return to work was higher early on (five weeks) in the patients with discectomy with fusion, but there was no significant difference at ten weeks. (Jacobs-*Cochrane*, 2004) (Abd-Alrahman, 1999) (Dowd, 1999) (Martins, 1976) (van den Bent, 1996) (Savolainen, 1998) One disadvantage of fusion appears to be abnormal kinematic strain on adjacent spinal levels. (Ragab, 2006) (Eck, 2002) (Matsunaga, 1999) (Katsuura, 2001) The advantage of fusion appears to be a decreased rate of kyphosis in the operated segments. (Yamamoto, 1991) (Abd-Alrahman, 1999) *(2) Fusion with autograft versus allograft:* The Cochrane review found limited evidence that the use of autograft provided better pain reduction than animal allograft. It also found that there was no difference between biocompatible osteoconductive polymer or autograft (limited evidence). (Jacobs-*Cochrane*, 2004) (McConnell, 2003) A problem with autograft is morbidity as related to the donor site including infection, prolonged drainage, hematomas, persistent pain and sensory loss. (Younger, 1989) (Sawin, 1998) (Sasso, 2005) Autograft is thought to increase fusion rates with less graft collapse. (Deutsch, 2007). See Decompression, myelopathy. *(3) Fusion with autograft with plate fixation versus allograft with plate fixation, Single level:* A recent retrospective review of patients who received allograft with plate fixation versus autograft with plate fixation at a single level found fusion rates in 100% versus 90.3% respectively. This was not statistically significant. Satisfactory outcomes were noted in all non-union patients. (Samartzis, 2005) *(4) Fusion with different types of autograft:* The Cochrane review did not find evidence that a vertebral body graft was superior to an iliac crest graft. (McGuire, 1994) *(5) Fusion with autograft versus fusion with autograft and additional instrumentation:* *Plate Fixation*: In single-level surgery there is limited evidence that there is any difference between the use of plates and fusion with autograft in terms of union rates. For two-level surgery, there was moderate evidence that there was more improvement in arm pain for patients treated with a plate than for those without a plate. Fusion rate is improved with plating in multi-level surgery. (Wright, 2007) See Plate fixation, cervical spine surgery. *Cage*: Donor site pain may be decreased with the use of a cage rather than a plate, but donor site pain was not presented in a standardized manner. At two years pseudoarthrosis rate has been found to be lower in the fusion group (15%) versus the cage group (44%). A six-year follow-up of the same study group revealed no significant difference in outcome variables between the two treatment groups (both groups had pain relief). In the subgroup of patients with the cage who attained fusion, the overall outcome was better than with fusion alone. Patients treated with cage instrumentation have less segmental kyphosis and better-preserved disc height. This only appears to affect outcome in a positive way in cage patients that achieve fusion (versus cage patients with pseudoarthrosis). (Poelsson, 2007) (Varuch, 2002) (Hacker 2000) See also Adjacent segment disease/degeneration (fusion). *(6) Fusion with allograft alone versus with allograft and additional instrumentation:* *Plate Fixation:* Retrospective studies indicate high levels of pseudoarthrosis rates (as high as 20% for one-level and 50% for two-level procedures) using allograft alone. In a recent comparative retrospective study examining fusion rate with plating, successful fusion was achieved in 96% of single-level cases and 91% of two-level procedures. This could be compared to a previous retrospective study by the same authors of non-plated cases that achieved successful fusion in 90% of

	single-level procedures and 72% of two-level procedures. (Kaiser, 2002) (Martin, 1999) See Plate fixation, cervical spine surgery. *Complications:* *Collapse of the grafted bone and loss of cervical lordosis:* collapse of grafted bone has been found to be less likely in plated groups for patients with multiple-level fusion. Plating has been found to maintain cervical lordosis in both multi-level and one-level procedures. (Troyanovich, 2002) (Herrmann, 2004) (Katsuura, 1996) The significance on outcome of kyphosis or loss of cervical lordosis in terms of prediction of clinical outcome remains under investigation. (Peolsson, 2004) (Haden, 2005) (Poelsson, 2007) (Hwang, 2007) *Pseudoarthrosis:* This is recognized as an etiology of continued cervical pain and unsatisfactory outcome. Treatment options include a revision anterior approach vs. a posterior approach. Regardless of approach, there is a high rate of continued moderate to severe pain even after solid fusion is achieved. (Kuhns, 2005) (Mummaneni, 2004) (Coric, 1997) *Anterior versus posterior fusion:* In a study based on 932,009 hospital discharges associated with cervical spine surgery, anterior fusions were shown to have a much lower rate of complications compared to posterior fusions, with the overall percent of cases with complications being 2.40% for anterior decompression, 3.44% for anterior fusion, and 10.49% for posterior fusion. (Wang, 2007) *Predictors of outcome of ACDF:* Predictors of good outcome include non-smoking, a pre-operative lower pain level, soft disc disease, disease in one level, greater segmental kyphosis pre-operatively, radicular pain without additional neck or lumbar pain, short duration of symptoms, younger age, no use of analgesics, and normal ratings on biopsychosoical tests such as the Distress and Risk Assessment Method (DRAM). Predictors of poor outcomes include non-specific neck pain, psychological distress, psychosomatic problems and poor general health. (Peolsson, 2006) (Peolsson, 2003) Patients who smoke have compromised fusion outcomes. (Peolsson, 2008) See Plate fixation, cervical spine surgery. See also Adjacent segment disease/degeneration (fusion) & Iliac crest donor-site pain treatment. *Use of Bone-morphogenetic protein (BMP):* FDA informed healthcare professionals of reports of life-threatening complications associated with recombinant human Bone Morphogenetic Protein (rhBMP) when used in the cervical spine for spinal fusion. The safety and effectiveness of rhBMP in the cervical spine have not been demonstrated, and these products are not approved for this use. These complications were associated with swelling of neck and throat tissue, which resulted in compression of the airway and/or neurological structures in the neck. (FDA MedWatch, 2008) Bone-morphogenetic protein was used in approximately 25% of all spinal fusions nationally in 2006, with use associated with more frequent complications for anterior cervical fusions. No differences were seen for lumbar, thoracic, or posterior cervical procedures, but the use of BMP in anterior cervical fusion procedures was associated with a higher rate of complication occurrence (7.09% with BMP vs 4.68% without BMP) with the primary increases seen in wound-related complications (1.22% with vs 0.65% without) and dysphagia or hoarseness (4.35% with vs 2.45% without). (Cahill-*JAMA*, 2009)
Corpectomy & stab1175ilization	Recommended as indicated below. Corpectomy, an operation to remove a portion of the vertebra and adjacent intervertebral discs, is a common surgery used for decompression of the spinal cord for degenerative spondylotic disease (generally when myelopathy is present), as well as for treatment of ossification of the posterior longitudinal ligament, trauma, infection, and neoplastic conditions. Reconstruction is generally performed using a strut graft or prosthetic device, and may then be

	additionally stabilized with an internal fixation device. This procedure has been recommended when compression of the anterior epidural space is not localized to the level of the individual disc. Corpectomy is also recommended for correction of a fixed kyphotic deformity. The advantage of this approach is that the number of surfaces at which fusion is required is decreased, with the disadvantage being that the graft is under a mechanically more demanding environment. (Rao, 2006) (Sevki, 2004) (Mayr, 2002) Treatment of cervical spondylotic myelopathy with corpectomy with preserved posterior vertebral wall is as good as conventional corpectomy. (Ying, 2007) See also Discectomy/laminectomy/laminoplasty.

The Spine, Rothman and Simeone, third edition, pg 1175

- ☐ **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**
- **X MEDICAL JUDGEMENT, CLINICAL EXPERIENCE AND EXPERTISE IN ACCORDANCE WITH ACCEPTED MEDICAL STANDARDS**
- ☐ **MERCY CENTER CONSENSUS CONFERENCE GUIDELINES**
- ☐ **MILLIMAN CARE GUIDELINES**
- **X 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)**