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| <b>Case Number:</b>   | CM14-0081230 |                              |            |
| <b>Date Assigned:</b> | 07/18/2014   | <b>Date of Injury:</b>       | 02/20/2008 |
| <b>Decision Date:</b> | 09/18/2014   | <b>UR Denial Date:</b>       | 05/22/2014 |
| <b>Priority:</b>      | Standard     | <b>Application Received:</b> | 06/03/2014 |

### HOW THE IMR FINAL DETERMINATION WAS MADE

MAXIMUS Federal Services sent the complete case file to an expert reviewer. He/she has no affiliation with the employer, employee, providers or the claims administrator. The expert reviewer is Board Certified in Anesthesiology, has a subspecialty in Pain Management and is licensed to practice in Tennessee. He/she has been in active clinical practice for more than five years and is currently working at least 24 hours a week in active practice. The expert reviewer was selected based on his/her clinical experience, education, background, and expertise in the same or similar specialties that evaluate and/or treat the medical condition and disputed items/services. He/she is familiar with governing laws and regulations, including the strength of evidence hierarchy that applies to Independent Medical Review determinations.

### CLINICAL CASE SUMMARY

The expert reviewer developed the following clinical case summary based on a review of the case file, including all medical records:

The patient is a 63-year-old male who has submitted a claim for autonomic nervous system disorder associated with an industrial injury date of February 20, 2008. Medical records from 2011 to 2014 were reviewed. The patient complained of constant neck pain with numbness in right upper extremity rated 5/10; constant mid back pain rated 4-5/10; and constant low back pain with tingling in left lower extremity rated 6/10; frequent right shoulder pain rated 3/10; constant right elbow pain rated 2/10, radiating to fingers; and constant right wrist pain rated 2/10. Physical examination showed limitation of motion of the right elbow and lumbar spine; positive Spurling's and shoulder depression tests bilaterally; and tenderness of the cervical spine with spasms. The diagnoses were cervical radiculopathy, thoracic sprain, lumbar sprain, right shoulder internal derangement, and right wrist carpal tunnel syndrome. In addition to this, the patient was diagnosed with idiopathic peripheral autonomic neuropathy and unspecified disorder of autonomic nervous system on a progress report dated April 1, 2014. However, the patient denies history of cardiopulmonary disease. Treatment to date has included oral analgesics, home exercise program, physical therapy, TENS, acupuncture, chiropractic therapy, and splinting. Utilization review from May 22, 2014 denied the requests for unknown cardio-respiratory testing (autonomic function assessment); cardio-vagal innervation and heart rate variability, adrenergic; and EKG (electrocardiogram) to be repeated approximately every 3 months. The recent examination did not reveal findings suggestive of cardiorespiratory impairment that would warrant routine testing. Evidence-based support for these testing procedures is also lacking.

### IMR ISSUES, DECISIONS AND RATIONALES

The Final Determination was based on decisions for the disputed items/services set forth below:

**Unknown cardio-respiratory testing (autonomic function assessment): Upheld**

**Claims Administrator guideline:** The Claims Administrator did not base their decision on the MTUS. Decision based on Non-MTUS Citation Official Disability Guidelines (ODG): Pain (Chronic), Pulmonary (Acute & Chronic).

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Clinical Neurophysiology Volume 117, Issue 4, Pages 716-730, April 2006: Assessment of cardiovascular autonomic function ([http://www.clinph-journal.com/article/S1388-2457\(05\)00430-X/abstract](http://www.clinph-journal.com/article/S1388-2457(05)00430-X/abstract)).

**Decision rationale:** The CA MTUS does not address this topic. Per the Strength of Evidence hierarchy established by the California Department of Industrial Relations, Division of Workers' Compensation, Clinical Neurophysiology was used instead. According to the literature, autonomic assessment has played an important role in elucidating the role of the autonomic nervous system in diverse clinical and research settings. The techniques most widely used in the clinical setting entail the measurement of an end-organ response to a physiological provocation. The non-invasive measures of cardiovascular parasympathetic function involve the analysis of heart rate variability, while the measures of cardiovascular sympathetic function assess the blood pressure response to physiological stimuli. In this case, the patient was diagnosed with idiopathic peripheral autonomic neuropathy and unspecified disorder of autonomic nervous system on a progress report dated April 1, 2014. However, the patient denies history of cardiopulmonary disease. There was also no evidence of cardiopulmonary or autonomic nervous system pathology based on the medical records submitted. The medical necessity cannot be established. There was no clear rationale for the request. Furthermore, the request did not specify procedure to be done. Therefore, the request for unknown cardio-respiratory testing (autonomic function assessment) is not medically necessary.

**Cardio-vagal innervation and heart rate variability, adrenergic: Upheld**

**Claims Administrator guideline:** The Claims Administrator did not cite any medical evidence for its decision.

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Autonomic Nervous System Testing - ANS Testing ([http://www.qhrv.com/dtr\\_ans.htm](http://www.qhrv.com/dtr_ans.htm)).

**Decision rationale:** The CA MTUS does not address this topic. Per the Strength of Evidence hierarchy established by the California Department of Industrial Relations, Division of Workers' Compensation, Autonomic Nervous System Testing - ANS Testing was used instead. According to the literature, autonomic nervous system (ANS) testing includes assessment of parasympathetic function (cardio-vagal innervation) and sympathetic adrenergic function (vasomotor adrenergic innervation). Cardio-vagal innervation testing evaluates heart rate response to deep breathing and to the Valsalva maneuver, via electrocardiogram rhythm strip.

Vasomotor adrenergic innervation testing evaluates response of beat-to-beat blood pressure to the head-up tilt and Valsalva maneuver. In this case, the patient was diagnosed with idiopathic peripheral autonomic neuropathy and unspecified disorder of autonomic nervous system on a progress report dated April 1, 2014. However, the patient denies history of cardiopulmonary disease. There was also no evidence of cardiopulmonary or autonomic nervous system pathology based on the medical records submitted. The medical necessity cannot be established. There was no clear rationale for the request. Therefore, the request for cardio-vagal innervation and heart rate variability, adrenergic is not medically necessary.

**EKG (Electrocardiogram) to be repeated approximately every 3 months:** Upheld

**Claims Administrator guideline:** The Claims Administrator did not cite any medical evidence for its decision.

**MAXIMUS guideline:** The Expert Reviewer did not base their decision on the MTUS. Decision based on Non-MTUS Citation Harrison's Principles of Internal Medicine, 18th ed., Chapter 228 Electrocardiography.

**Decision rationale:** CA MTUS does not specifically address this issue. As stated in Harrison's Principles of Internal Medicine, electrocardiogram (ECG) is used in detecting arrhythmia, conduction abnormalities, myocardial ischemia, metabolic disturbances or increased susceptibility to sudden cardiac death (QT prolongation syndrome). In this case, there were no subjective complaints or objective findings pertaining to the cardiovascular system that may warrant this procedure. The medical necessity cannot be established. There was no clear rationale for the request. Therefore, the request for EKG (Electrocardiogram) to be repeated approximately every 3 months is not medically necessary.