

Notice of Independent Review Decision

September 5, 2012

DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE:

EMG/NCV studies of the bilateral upper extremities CPT 95861

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

The physician performing this review is Board Certified, American Board of Physical Medicine & Rehabilitation. The physician is certified in pain management. The physician is a member of the Texas Medical Board. The physician has a private practice of Physical Medicine & Rehabilitation, Electro Diagnostic Medicine & Pain Management in Texas. The physician has published in medical journals. The physician is a member of his state and national medical societies.

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)

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

Upon independent review, I find that the previous adverse determination should be upheld.

INFORMATION PROVIDED TO THE IRO FOR REVIEW:

Records Received: 1 document received totaling 17 pages via fax 08/16/12 Texas Department of Insurance IRO request and Letter of authorization, 22 pages received via fax 08/21/12 URA response to disputed services including administrative and medical records. Dates of documents range from 05/11/12 to 08/16/12.

PATIENT CLINICAL HISTORY [SUMMARY]:

According to the medical records reviewed, the claimant is described as a injured worker being treated for her wrists. Date of injury is indicated to be xx/xx/xx. The claimant reported it in association with continuous typing activities. She stated that her wrists ached constantly. Upon being examined by Dr. 07/03/12, she complained of an injury to both wrists and the left shoulder. The claimant also had complaints of bilateral wrist pain with numbness and tingling to both hands. Following the hand and wrist symptoms, she then began to complain of neck pain and bilateral arm numbness and tingling. She was utilizing bilateral wrist splints. She was treated with physical therapy. She was found to have positive Tinel's in both wrists and positive Phalen's on the left. Her diagnosis was that of bilateral hand pain and paresthesias.

The indicated requested service under consideration for this IRO is *CPT* code 95861, which is needle EMG, two extremities, with or without paraspinal areas. The IRO request does not indicate specific *CPT* code for nerve conduction studies, which are mentioned intermittently within the records as under consideration because of the possibility within the differential diagnosis for carpal tunnel syndrome. The denials of preauthorization have centered around the *ODG* not recommending invasive needle EMG studies for possible cervical disk disease where there is lack of clarity in the clinical examination.

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

Given the IRO requested *CPT* code 95861, the evaluation is made under the area dealing with needle EMG studies. According to the *ODG*, in the workup of cervical disk disease there is minimal justification for the invasive studies to evaluate for possible radiculopathy. Nerve conduction studies may be an option where there is a question of an entrapment neuropathy such as at the elbow or wrist level. However, nerve conduction studies are not a part of this IRO evaluation.

ODG -TWC

ODG Treatment

Integrated Treatment/Disability Duration Guidelines

Carpal Tunnel Syndrome (Acute & Chronic)

Eloisa Haynes
IRO# 42434
ODG Reference

Electrodiagnostic studies (EDS) Upper Extremity	Recommended as an option after closed fractures of distal radius & ulna if necessary to assess nerve injury. (Bienek, 2006) Electrodiagnostic testing includes testing for nerve conduction velocities (NCV), and possibly the addition of electromyography
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	(EMG). For more information, see the Carpal Tunnel Syndrome chapter. Among patients seeking treatment for hand and wrist disorders generally, workers' compensation patients underwent more procedures and more doctor visits than patients using standard health insurance. WC patients underwent surgery at a higher rate -- 44% compared to 35% -- and electrodiagnostic testing -- 26% compared to 15%. (Day, 2010)
Electromyography (EMG)	See Electrodiagnostic studies (EDS).

Electrodiagnostic studies (EDS) Carpal Tunnel Chapter	<p>Recommended in patients with clinical signs of CTS who may be candidates for surgery. Electrodiagnostic testing includes testing for nerve conduction velocities (NCV), but the addition of electromyography (EMG) is not generally necessary. See also Nerve conduction studies (NCS) and Electromyography (EMG). In general, carpal tunnel syndrome should be proved by positive findings on clinical examination and should be supported by nerve conduction tests before surgery is undertaken. Mild CTS with normal electrodiagnostic studies (EDS) exists, but moderate or severe CTS with normal EDS is very rare. Positive EDS in asymptomatic individuals is not CTS. Studies have not shown portable nerve conduction devices to be effective. Appropriate electrodiagnostic studies (EDS) include nerve conduction studies (NCS). In more difficult cases, electromyography (EMG) may be helpful. NCS and EMG may confirm the diagnosis of carpal tunnel syndrome but may be normal in early or mild cases of CTS. If the EDS are negative, tests may be repeated later in the course of treatment. (Various references listed under "Detection of Neurologic Abnormalities") (Smith, 2002) (Jablecki2, 2002) (AHRQ, 2003) (Podnar, 2005) (Lew, 2005) (Schrijver, 2005) (Sheu, 2006) Poor overlap between various screening procedures warns against the use of electrodiagnostic findings alone without also considering the symptom presentation. (Homan, 1999) A large cohort study showed that over one third of patients undergoing CTR may have had an inappropriate electrodiagnostic workup before the surgery. (Storm, 2005) Despite the fact that electrodiagnostic testing is considered by many to be the "gold standard" for the diagnosis of CTS, some studies have suggested that it not be a requirement. According to one systematic review, "in cases of clear-cut clinical CTS, electrodiagnosis is not warranted either as a diagnostic test, where clinical symptoms are well defined, or as a predictive indicator of surgical outcome, but it may still be useful in cases where the clinical diagnosis is not clear." (Jordan, 2002) Regarding preplacement nerve testing for CTS, not hiring workers with abnormal post-offer preplacement median nerve tests to reduce costs of work-related CTS is not a cost-effective strategy for employers. (Franzblau, 2004) NC-stat technology cannot be recommended for screening or diagnosis of CTS in an industrial population. (Katz, 2006) For more information see NC-stat nerve conduction studies. There is concordance between the results of EDS and the initial diagnostic hypothesis only 40% of the time, confirming the usefulness of EDS. (Cocito, 2006) In using demographic and clinical data to identify the clinical pattern that predicts the diagnosis of CTS, the best pattern associated with the diagnosis was the presence of paresthesias or pain in at least 2 of the first 4 digits in association with one of the following: female gender, symptoms worsening at night or on awakening, a BMI ≥ 30, thenar atrophy, or other sign (Tinel's, Phalen's, or Reversed Phalen's signs). However, the clinical picture alone in the workers' compensation case, without neurophysiologic studies, may not be sufficient to correctly predict the diagnosis of CTS. (Gomes, 2006) This study used the CTS-6 assessment tool along with a comprehensive history and physical examination in diagnosing CTS, and concluded that in unambiguous cases of CTS, electrodiagnostic testing would not be warranted if its sole purpose is to confirm the diagnosis of CTS. As such, its value in this situation is not only to confirm a</p>
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physician's suspicion of CTS, but also to quantify and stratify the severity of the condition. ([Graham, 2008](#)) See also [Multiple extremity testing](#). Note: ODG recommends that NCS should be done to support the diagnosis of CTS prior to surgery in workers' compensation cases. If an individual has appropriate responses to treatment (i.e. injections, modification of activities, meds) but still has symptoms with normal NCS, surgery may be appropriate on a case-by-case basis and reasonable documentation by the treating physician.

Protocols for electrodiagnostic studies: The American Association of Electrodiagnostic Medicine, American Academy of Neurology, and the American Academy of Physical Medicine and Rehabilitation have jointly published their practice parameter for electrodiagnostic studies in carpal tunnel syndrome. In patients with suspected CTS, the following EDX studies are recommended:

(1) Perform a median sensory NCS across the wrist with a conduction distance of 13 to 14 cm. If the result is abnormal, compare the result of the median sensory NCS to the result of a sensory NCS of one other adjacent sensory nerve in the symptomatic limb.

(2) If the initial median sensory NCS across the wrist has a conduction distance greater than 8 cm and the result is normal, one of the following additional studies is recommended:

(a) Comparison of median sensory or mixed nerve conduction across the wrist over a short (7 to 8 cm) conduction distance with ulnar sensory nerve conduction across the wrist over the same short (7 to 8 cm) conduction distance, or

(b) Comparison of median sensory conduction across the wrist with radial or ulnar sensory conduction across the wrist in the same limb, or

(c) Comparison of median sensory or mixed nerve conduction through the carpal tunnel to sensory or mixed NCSs of proximal (forearm) or distal (digit) segments of the median nerve in the same limb. ([Jablecki, 2002](#)) ([Chang, 2006](#))

Minimum Standards for electrodiagnostic studies: The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) recommends the following minimum standards:

(1) EDX testing should be medically indicated.

(2) Testing should be performed using EDX equipment that provides assessment of all parameters of the recorded signals. Studies performed with devices designed only for "screening purposes" rather than diagnosis are not acceptable.

(3) The number of tests performed should be the minimum needed to establish an accurate diagnosis.

(4) NCSs (Nerve conduction studies) should be either (a) performed directly by a physician or (b) performed by a trained individual under the direct supervision of a physician. Direct supervision means that the physician is in close physical proximity to the EDX laboratory while testing is underway, is immediately available to provide the trained individual with assistance and direction, and is responsible for selecting the appropriate NCSs to be performed.

(5) EMGs (Electromyography - needle not surface) must be performed by a physician specially trained in electrodiagnostic medicine, as these tests are simultaneously performed and interpreted.

(6) It is appropriate for only 1 attending physician to perform or supervise all of the components of the electrodiagnostic testing (e.g., history taking, physical evaluation, supervision and/or performance of the electrodiagnostic test, and interpretation) for a given patient and for all the testing to occur on the same date of service. The reporting of NCS and EMG study results should be integrated into a unifying diagnostic impression.

(7) In contrast, dissociation of NCS and EMG results into separate reports is inappropriate unless specifically explained by the physician. Performance and/or interpretation of NCSs separately from that of the needle EMG component of the

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	test should clearly be the exception (e.g. when testing an acute nerve injury) rather than an established practice pattern for a given practitioner. (AANEM, 2009)
Electromyography (EMG)	Recommended only in cases where diagnosis is difficult with nerve conduction studies (NCS). In more difficult cases, needle electromyography (EMG) may be helpful as part of electrodiagnostic studies which include nerve conduction studies (NCS). There are situations in which both electromyography and nerve conduction studies need to be accomplished, such as when defining whether neuropathy is of demyelinating or axonal type. Seldom is it required that both studies be accomplished in straightforward condition of median and ulnar neuropathies or peroneal nerve compression neuropathies. Electromyographic examinations should be done by physicians. (Utah, 2006) Surface EMG is not recommended. See Electrodiagnostic studies .
Electrodiagnostic studies (EDS) Neck Chapter	See also Nerve conduction studies (NCS) and Electromyography (EMG). Electrodiagnostic studies should be performed by appropriately trained Physical Medicine and Rehabilitation or Neurology physicians. For more information and references, see the Carpal Tunnel Syndrome Chapter . Below are the Minimum Standards from that chapter. Minimum Standards for electrodiagnostic studies: The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) recommends the following minimum standards: (1) EDX testing should be medically indicated. (2) Testing should be performed using EDX equipment that provides assessment of all parameters of the recorded signals. Studies performed with devices designed only for “screening purposes” rather than diagnosis are not acceptable. (3) The number of tests performed should be the minimum needed to establish an accurate diagnosis. (4) NCSs (Nerve conduction studies) should be either (a) performed directly by a physician or (b) performed by a trained individual under the direct supervision of a physician. Direct supervision means that the physician is in close physical proximity to the EDX laboratory while testing is underway, is immediately available to provide the trained individual with assistance and direction, and is responsible for selecting the appropriate NCSs to be performed. (5) EMGs (Electromyography - needle not surface) must be performed by a physician specially trained in electrodiagnostic medicine, as these tests are simultaneously performed and interpreted. (6) It is appropriate for only 1 attending physician to perform or supervise all of the components of the electrodiagnostic testing (e.g., history taking, physical evaluation, supervision and/or performance of the electrodiagnostic test, and interpretation) for a given patient and for all the testing to occur on the same date of service. The reporting of NCS and EMG study results should be integrated into a unifying diagnostic impression. (7) In contrast, dissociation of NCS and EMG results into separate reports is inappropriate unless specifically explained by the physician. Performance and/or interpretation of NCSs separately from that of the needle EMG component of the test should clearly be the exception (e.g. when testing an acute nerve injury) rather than an established practice pattern for a given practitioner. (AANEM, 2009)
Electromyography (EMG) Neck Chapter	Recommended (needle, not surface) as an option in selected cases. The American Association of Electrodiagnostic Medicine conducted a review on electrodiagnosis in relation to cervical radiculopathy and concluded that the test was moderately sensitive (50%-71%) and highly specific (65%-85%). (AAEM, 1999) EMG findings may not be predictive of surgical outcome in cervical surgery, and patients may still benefit from surgery even in the absence of EMG findings of nerve root impingement. This is in stark contrast to the lumbar spine where EMG findings have

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been shown to be highly correlative with symptoms.

Positive diagnosis of radiculopathy: Requires the identification of neurogenic abnormalities in two or more muscles that share the same nerve root innervation but differ in their peripheral nerve supply.

Timing: Timing is important as nerve root compression will reflect as positive if active changes are occurring. Changes of denervation develop within the first to third week after compression (fibrillations and positive sharp waves develop first in the paraspinals at 7-10 days and in the limb muscles at 2-3 weeks), and reinnervation is found at about 3-6 months

Acute findings: Identification of fibrillation potentials in denervated muscles with normal motor unit action potentials (usually within 6 months of symptoms: may disappear within 6 weeks in the paraspinals and persist for up to 1-2 years in distal limbs).

Chronic findings: Findings of motor unit action potentials with increased duration and phases that represent reinnervation. With time these become broad, large and polyphasic and may persist for years.

Anatomy: The test primarily evaluates ventral (anterior) root function (motor) and may be negative if there is dorsal root compression (sensory) only. Only C4-8 and T1 in the neck region have limb representation that can be tested electrodiagnostically. The anatomic basis for this lies in the fact that the cervical nerve roots have a motor and a sensory component. It is possible to impinge the sensory component with a herniated disc or bone spur and not affect the motor component. As a result, the patient may report radicular pain that correlates to the MRI without having EMG evidence of motor loss.

Paraspinal fibrillation potentials: May be seen in normal individuals and are nonspecific for etiology. The presence of these alone is insufficient to make a diagnosis of radiculopathy and they may be absent when there is a diagnosis of radiculopathy secondary to sampling error, timing, or because they were spared. They may support a diagnosis of radiculopathy when corresponding abnormalities are present in the limb muscles.

Indications when particularly helpful: EMG may be helpful for patients with double crush phenomenon, in particular, when there is evidence of possible metabolic pathology such as neuropathy secondary to diabetes or thyroid disease, or evidence of peripheral compression such as carpal tunnel syndrome.

H-reflex: Technically difficult to perform in the upper extremity but can be derived from the median nerve. The test is not specific for etiology and may be difficult to obtain in obese patients or those older than 60 years of age.

([Negrin, 1991](#)) ([Alrawi, 2006](#)) ([Ashkan, 2002](#)) ([Nardin, 1999](#)) ([Tsao, 2007](#)) See [Discectomy-laminectomy-laminoplasty](#). (Surface EMG and F-wave tests are not very specific and therefore are not recommended. For more information on surface EMG, see the [Low Back Chapter](#).)

While cervical electrodiagnostic studies are not necessary to demonstrate a cervical radiculopathy, they have been suggested to confirm a brachial plexus abnormality or some problem other than a cervical radiculopathy, but these studies can result in unnecessary over treatment. ([Plastaras, 2011](#)) ([Lo, 2011](#)) ([Fuglsang-Frederiksen, 2011](#))

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)