Submitter : Dr. Nisar Syed **Date:** 09/22/2006

Organization : Dr. Nisar Syed

Category : Physician

Issue Areas/Comments

GENERAL

GENERAL

"See Attachment"

CMS-1321-P-264-Attach-1.DOC

Attach # 264

September 8, 2006

Office of the Administrator
Centers for Medicare and Medicaid Services
Department of Health and Human Services
Mail Stop C4-26-05
7500 Security Boulevard
Baltimore, MD 21244-1850

Attention: CMS-1321-P; Medicare Program; Revisions to Payment Policies under the Physician Fee Schedule for Calendar Year 2007 and Other Changes to Payment under Part B

Dear Administrator:

I want to thank you for the opportunity to provide comment on the Centers for Medicare and Medicaid Services' proposed rule, published in the Federal Register on August 23, 2006. This letter is written to share my concern regarding the proposed reduction in professional fees for radiation/oncology brachytherapy services.

The proposed reductions for the RVUs namely the Work RVUs will not allow me to offer the most appropriate treatment options for my Medicare patients. Brachytherapy is an important therapy offered for breast cancer patients because it allows the radiation to be given in 5-7 days, which allows the process to move very quickly so that other treatments (chemotherapy) can be started as well. The Work component of the RVUs that you are proposing to reduce by at least 23% comprises the Physician's time to perform a service, technical skills and physical and mental effort involved in treating the patients. The preparation and effort to properly create a treatment plan is very time consuming. The proposed reduction to all brachytherapy codes, especially CPT 77781, will not adequately cover the time and involvement required to prepare a patient for brachytherapy. If the reduction does take place, CMS will be limiting access to brachytherapy for Medicare patients. Choice, quality and availability is key for the beneficiary.

As a Physician, I strongly recommend that CMS reconsiders the proposed Work RVU reduction for brachytherapy. Please leave brachytherapy codes as is, and, if needed, make a reduction to the conversion factor. I appreciate your time and consideration in the review of this important issue and strongly advise CMS to reconsider the significant impact the proposal outlines. Thank you for the opportunity to express my opinion

Sincerely,

Nisar Syed, M.D.
Radiation Oncologist
Long Beach Memorial Medical Center
2801 Atlntic Ave.
Long Beach, CA 90801

cc: Senator Barbara Boxer, CA (D)
Senator Diane Feinstein, CA (D)
Congressman Henry Waxman, CA (D)

cc: Carolyn Mullen, Deputy Director,
Division of Practitioner Services

Submitter : **Dr. John West**

Organization : **Dr. John West**

Category : **Physician**

Date: **09/22/2006**

Issue Areas/Comments

GENERAL

GENERAL

"See Attachment"

CMS-1321-P-265-Attach-1.DOC

Sincerely,

John West, M.D.
Breast Surgeon
230 S. Main St. Ste. 100
Orange, CA 92868

cc: Senator Barbara Boxer, CA (D)
Senator Diane Feinstein, CA (D)
Congressman Henry Waxman

cc: Carolyn Mullen, Deputy Director,
Division of Practitioner Services

cc: American Society of Breast Surgeons
Helen Pass, M.D. President ASBS

cc: American College of Surgeons
Mark A. Malangoni, MD, Chair, American College of Surgeons

Submitter : Shirlyn Adkins

Date: 09/22/2006

Organization : AANEM

Category : Health Care Professional or Association

Issue Areas/Comments

GENERAL

GENERAL

See Attachement

CMS-1321-P-266-Attach-1.PDF

CMS-1321-P-266-Attach-2.PDF

CMS-1321-P-266-Attach-3.PDF

Attach R
266

AMERICAN ASSOCIATION OF NEUROMUSCULAR & ELECTRODIAGNOSTIC MEDICINE
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Telephone: (507) 288-0100 Fax: (507) 288-1225
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September 22, 2006

The Honorable Mark McClellen, MD, PhD
Administrator
Centers for Medicare and Medicaid Services
Department of Health and Human Services
Attention: CMS-1321-P
PO Box 8014
Baltimore, MD 21244-8012

Submitted electronically at http://www.cms.hhs.gov/eRulemaking

Dear Administrator McClellan:

The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) appreciates the opportunity to respond to the proposed rule "Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule for Calendar Year 2007 and Other Changes to Payment Under Part B" published in the *Federal Register* August 22, 2006.

Independent Diagnostic Testing Facility (IDTF) Issues

The AANEM supports CMS' efforts to battle erroneous and fraudulent payments to IDTFs. Electrodiagnostic (EDX) procedures, such as those utilized by the AANEM's physician members are also performed at IDTFs. Fraudulence in electrodiagnostic medicine has been a cause of concern as news of major legal actions by the Illinois Attorney General, Westchester County (NY) District Attorney, and State Farm Automobile Insurance Company against IDTFs has surfaced. The AANEM believes the supplier standards outlined in the Proposed Rule will aide in curtailing the likelihood of these types of schemes from taking place in the Medicare program by ensuring enrollment of qualified IDTFs.

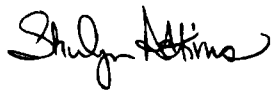
At the same time, the AANEM believes more needs to be done to protect patients and the Medicare Trust. CMS noted in its comments on the OIG report that it has "taken many major actions to address the types of program vulnerabilities identified in [the] report." However, IDTF utilization of NCSs has continued to grow at a rate far outpacing the increase in Medicare population and utilization by all other provider groups. For instance, in 2004 IDTFs performed 175,291 nerve conduction studies, 174% more than the 64,030 performed in 2003. No other provider group's utilization rates have increase at that rate. Revocation of billing privileges as outlined in proposed §410.33(h) can only be an effective enforcement measure if an appropriate monitoring system is in place to discover practices outside the performance standards. To this end, since CMS' funding limitations preclude requiring carriers to perform uniform site visits as noted in its comments on the OIG report, the AANEM respectfully suggests that CMS consider requiring targeted site visits or reviews when certain markers are triggered. For instance, an increase in utilization of more than a set percentage over the prior year, or chronic failure to submit update requirements of operational changes could trigger a visit or review. Additionally, creation of a performance standard requiring that supervising physicians be appropriately certified would ensure facilities are operated appropriately. For instance, the pending draft local coverage determination for IDTFs in California (DL22698) would require certification by the

American Board of Psychiatry and Neurology in Clinical Neurophysiology or by the American Board of Electrodiagnostic Medicine.

Finally, I have enclosed the AANEM's *Recommended Policy for Electrodiagnostic Medicine* and *Proper Performance and Interpretation of Electrodiagnostic Studies* which outline standards of care for electrodiagnostic studies. The *Recommended Policy* outlines qualifications of electrodiagnostic physicians and provides a table that outlines the number of studies needed in 90% of patients. This table can be utilized to identify overutilization. The *Proper Performance* position statement emphasizes the importance of trained physicians conducting NCS and needle EMGs. It also outlines that in most circumstances needle EMG and NCS should be performed at the same time, in the same location, and by an appropriately trained physician to reach an accurate diagnosis.

Thank you for your attention to these matters. The AANEM looks forward to working with CMS to assure the proper safeguards are applied to protect patient care.

Sincerely,



Shirlyn Adkins, JD
Executive Director

Enclosures

American Association of
Neuromuscular &
Electrodiagnostic Medicine

Recommended Policy for Electrodiagnostic Medicine

AANEM

Recommended Policy for Electrodiagnostic Medicine

American Association of Neuromuscular & Electrodiagnostic Medicine
American Academy of Neurology
American Academy of Physical Medicine and Rehabilitation

Executive Summary

The electrodiagnostic medicine (EDX) consultation is an important and useful extension of the clinical evaluation of patients with disorders of the peripheral and/or central nervous system. EDX tests are often crucial to evaluating symptoms, arriving at a proper diagnosis, and in following a disease process and its response to treatment in patients with neuromuscular disorders. Unfortunately, EDX studies are poorly understood by many in the medical and lay communities. Even more unfortunate, these studies have occasionally been abused by some providers, resulting in overutilization and inappropriate consumption of scarce health resources. The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM [formerly AAEM]) has developed this model policy to improve the quality of patient care, to encourage appropriate utilization of the procedures involved, and to assist Medicare Carrier Advisory Committees and other insurance carriers in developing policy regarding EDX testing. This document contains recommendations which can be used in developing and revising current reimbursement guidelines.

This document is based on the AANEM's publication, *The Electrodiagnostic Medicine Consultation*, and was further refined by consensus at a conference of 43 experts in the field of electrodiagnostic medicine held on April 8, 1994, in Chicago, Illinois. This consensus conference was held to produce guidelines that could be used to identify overutilization. Participants in the conference represented a diversity of practice types and were either neurologists or physiatrists and included the AANEM Board of Directors, committee chairs, Professional Practice Committee members, and other members of the association. Physicians from both academic medical centers and private practice were represented. With the help of the AANEM Professional Practice Committee, the guidelines have continuously been expanded to produce this comprehensive policy regarding the optimal use of EDX procedures.

This document provides:

1. An introduction to the mission of the AANEM.
2. An overview of the scope of electrodiagnostic medicine.
3. Indications for the performance of EDX testing.
4. A list of applicable American Medical Association Current Procedural Terminology (CPT™) codes.
5. A recommended source for a list of ICD-9-CM diagnosis codes that are acceptable indications for needle electromyography (EMG) and nerve conduction procedures.
6. An overview of nerve conduction studies (NCSs).
7. An overview of needle EMG.
8. An overview of late responses, including H-reflex and F-wave studies.
9. An overview of blink reflexes.
10. An overview of neuromuscular junction (NMJ) studies
11. An overview of somatosensory evoked potentials (SEPs).
12. An overview of autonomic nervous system function testing.
13. A recommended maximum number of EDX studies necessary for certain diagnostic categories in 90% of cases.
14. Information regarding the timing of EDX testing after an injury.
15. Recommended reasonable limits on the frequency of EDX testing in individual patients.
16. Recommended minimum standards for EDX testing that must be met under this policy.
17. A list of nerves to assist in coding for nerve conduction studies.

Recognizing the critical need for testing individualized to the patient's condition, it is necessary that physicians have flexibility to design and carry out the appropriate EDX studies. However, the peer-review mechanism should be triggered when patterns of electrodiagnostic test utilization significantly and consistently deviate from established norms for numbers and types of procedures. Individuals may obtain the names of American Board of Electrodiagnostic Medicine (ABEM) certified physicians from the ABEM directory found on the ABEM website at www.abemexam.org. These physicians can be contacted to review questionable cases, assist in the review process, and advise on claims that appear to be unusually excessive.

The American Association of Neuromuscular & Electrodiagnostic Medicine

Founded in 1953 and currently numbering over 4900 physicians, primarily neurologists and physiatrists, the AANEM is the largest organization worldwide dedicated solely to the scientifically based advancement of neuromuscular medicine. The primary goal of the AANEM is to increase the quality of patient care, specifically for those patients with disorders of the central and peripheral nervous systems, the neuromuscular junction, and skeletal muscle by contributing to steady improvement in the methods of diagnosing and treating patients with disorders of muscle and nerve. This goal is accomplished through programs in education, research, and quality assurance.

The AANEM publishes a wide range of educational material and sponsors annual didactic programs, symposia, courses, and workshops. The AANEM informs its members about both basic and clinical research activities in electrodiagnostic medicine and neuromuscular diseases through its annual meeting sessions, the journal *Muscle & Nerve*, videotapes, monographs, case reports, and other educational material. In so doing, the AANEM fosters the conduct of and enhances the quality of this research. The AANEM also offers a Training Program Self-Assessment Examination annually. This examination is an educational tool which is often used by training programs for their residents, fellows, and faculty members. The examination offers an opportunity for individuals to assess their knowledge of electrodiagnostic medicine.

The American Board of Electrodiagnostic Medicine is an independent credentialing body in electrodiagnostic medicine. Although it is organized and operated as a committee of the AANEM, it is completely autonomous for purposes of credentialing criteria and procedures. The ABEM's goal is to enhance the quality of patient care through a voluntary certification process and thereby serve the public interest. The ABEM holds an annual examination through which candidates are able to assess their level of competence.

The ABEM established a maintenance of certification program to provide a mechanism for ABEM Diplomates to demonstrate their continuing education in electrodiagnostic medicine as they keep up-to-date with this medical specialty. Diplomates are expected to demonstrate current medical knowledge and clinical problem-solving skills in periodic recertification examinations. Certification is limited to 10 years. The first time-limited certificates were issued in 1994.

The AANEM is committed to the development of medically sound and clinically relevant guidelines for electrodiagnostic medicine. This is accomplished through literature review, expert opinion, and consensus of AANEM leaders and committee members, as well as input from the general membership and other experts in the field. The AANEM has published *Somatosensory Evoked Potentials: Clinical Uses and Guidelines in Somatosensory Evoked Potentials*, and specific guidelines on median nerve entrapment at the wrist (carpal tunnel syndrome) are included in the AANEM's *Practice Parameter* for Electrodiagnostic Studies in Carpal Tunnel Syndrome. The AANEM's *Practice Parameter for Electrodiagnostic Studies in Ulnar Neuropathy at the Elbow* provides specific guidelines on nerve compression in the region of the elbow. The AANEM's *Practice Parameter for Needle Electromyographic Evaluation of Patients With Suspected Cervical Radiculopathy* provides specific guidelines of the needle EMG examination for patients with suspected cervical radiculopathy. The AANEM has also published papers on myasthenia gravis, laryngeal EMG, multifocal motor neuropathy, and many more. (Documents mentioned in this paragraph are available through the AANEM Executive Office for a small fee.)

Scope of Electrodiagnostic Medicine

Patients are referred for electrodiagnostic studies by neurologists and physiatrists trained in neuromuscular diagnosis, as well as by internists, primary care physicians, neurological and orthopaedic surgeons, and other healthcare providers. The AANEM has published *Referral Guidelines for Electrodiagnostic Medicine Consultations* (available through the AANEM Executive Office) to assist primary care physicians in determining if referral for an EDX consultation could be useful for their patients. Some patients are referred for EDX testing with a provisional diagnosis; others are not. Many patients are referred with merely symptoms and/or clinical findings and there is an expectation that the EDX consultant will be able to arrive at the correct diagnosis only after the completion of the EDX consultation.

After taking a history and examining the patient, the consultant develops a working diagnosis that may modify the referral diagnosis. The consultant's working diagnosis may also be modified as the study proceeds. A number of tests may be needed to address the referral and working diagnoses, and to arrive at the correct final diagnosis. A final diagnosis does not reflect either the decision-making process or the work performed that led to the diagnosis being established.

Furthermore, EDX testing does not always establish an etiologic diagnosis. When "rule-out" diagnoses are not

accepted, only a symptomatic diagnosis (e.g., ICD-9-CM code 729.5 "pain in limb" or 782.0 "disturbance in skin sensation") can be coded regardless of the work involved in performing the EDX consultation.

EDX studies are performed by physicians (generally neurologists or physiatrists) as part of an EDX consultation. EDX consultations include history-taking, appropriate physical examination, and the design, performance, and interpretation of EDX studies. These consultations usually take a minimum of 30 minutes to perform and can take up to 2 hours or more in particularly complicated clinical situations. Other healthcare professionals sometimes participate, either by assisting the physician consultant or by performing the NCSs under direct physician supervision.

Electrodiagnostic medicine includes a variety of electrodiagnostic studies, including NCSs (CPT codes 95900, 95903, and 95904), EMG (CPT codes 95860-95870), NMJ testing (CPT code 95937), and other specialized studies. EDX studies are an important means of diagnosing motor neuron diseases, myopathies, radiculopathies, plexopathies, neuropathies, and NMJ disorders (e.g., myasthenia gravis and myasthenic syndrome). EDX studies are also useful when evaluating tumors involving an extremity, the spinal cord, and/or the peripheral nervous system, and in neurotrauma, low-back pain, and spondylosis and cervical and lumbosacral disc diseases.

Although a common problem such as tingling and numbness in the hand and arm (which could be due to lesions in the brain, spinal cord, cervical roots, brachial plexus, or nerves in the upper extremities) may be studied in a similar way by many EDX consultants, there is no single universally accepted specific protocol or set of procedures employed for each diagnostic category. Instead, the EDX consultant must continually reassess the findings encountered during the performance of the EDX testing; this new information may require modification of the initial study design to include other unplanned procedures and may require consideration of different alternative diagnostic possibilities. The EDX evaluation is not just a standard "test" like an electrocardiogram (EKG). EKG testing involves only recording techniques performed by a set protocol and is routinely delegated to nonphysician technical personnel for later interpretation by the physician. The EDX consultant does not "read" needle EMGs; he or she is integrally involved in performing a detailed study.

EDX studies are individually designed by the EDX consultant for each patient. The examination design is dynamic and often changes during the course of the study in response to new information obtained. The accuracy of needle EMG testing is dependent on the skill of the examiner. The diagnostic interpretation of the needle EMG examination takes place during the performance of the test. Thus, this evaluation constitutes the practice of medicine. For these reasons, it is the position of the AANEM, along with the American Medical Association, the American Academy of Neurology, the American Academy of Physical Medicine and Rehabilitation, and the Department of Veterans Affairs (Veteran's Administration), as well as many state medical boards, that only physicians (MD or DO) should perform needle EMG examinations.

EDX consultants receive training during residency and/or in special electrodiagnostic fellowships after residency devoted to the performance of these studies and their interpretation. Knowledge of electrodiagnostic medicine is necessary to pass the board examinations given by the American Board of Physical Medicine and Rehabilitation and the American Board of Psychiatry and Neurology. In addition, there are two examinations specifically emphasizing electrodiagnostic medicine that are available to physicians who are qualified by training and experience: The American Board of Electrodiagnostic Medicine examination and the American Board of Psychiatry and Neurology's Added Qualifications in Clinical Neurophysiology examination.

For these reasons, the AANEM has traditionally held the position that the only person who can responsibly determine the appropriate tests to investigate a particular patient's clinical symptoms is the physician performing the EDX evaluation. The AANEM recognizes, however, that there is potential for overuse of some EDX procedures by individual providers and that judgments and decisions must be made regarding reimbursement policies for EDX testing. The approach of establishing limits on the number of procedures reimbursed per diagnostic category is fraught with difficulty.

A large number of limits are needed since there are many diagnostic categories. There is little relevant scientific literature on such limits; therefore, alternative approaches are preferable. For example, the peer-review mechanism can be triggered when patterns of EDX test utilization significantly and consistently exceed regional norms (for example, utilization of EDX testing above the 90% level).

This latter approach effectively limits abuse while still permitting the physician the latitude to use his or her best clinical judgment in evaluating the patient in order to provide the best, most cost-efficient patient care. It is the AANEM's desire that this model policy will be given serious consideration when revisions are made to reimbursement policies, so that policies recognize the high standards of practice currently existing in the medical community.

Indications

EDX testing is used to evaluate the integrity and function of the peripheral nervous system (most cranial nerves, spinal roots, plexi, and nerves), NMJ, muscles, and the central nervous system (brain and spinal cord). EDX testing is performed as part of an EDX consultation for diagnosis or as follow-up of an existing condition. EDX studies can provide information to:

1. Identify normal and abnormal nerve, muscle, motor or sensory neuron, and NMJ functioning.
2. Localize region(s) of abnormal function.
3. Define the type of abnormal function.
4. Determine the distribution of abnormalities.
5. Determine the severity of abnormalities.
6. Estimate the date of a specific nerve injury.
7. Estimate the duration of the disease.
8. Determine the progression of abnormalities or of recovery from abnormal function.
9. Aid in diagnosis and prognosis of disease.
10. Aid in selecting treatment options.
11. Aid in following response to treatment by providing objective evidence of change in neuromuscular function.
12. Localize correct locations for injection of intramuscular agents (e.g., botulinum toxin).

Current Procedural Terminology Codes in Electrodiagnostic Medicine

This document applies to the following CPT codes:

Code: Descriptor

51785: Needle electromyography (EMG) studies of anal or urethral sphincter, any technique

51792: Stimulus evoked response (e.g., measurement of bulbocavernosus reflex latency time)

95860: Needle electromyography; one extremity, with or with out related paraspinal areas

95861: Needle electromyography; two extremities, with or without related paraspinal areas

95863: Needle electromyography; three extremities, with or without related paraspinal areas

95864: Needle electromyography; four extremities, with or without related paraspinal areas

95867: Needle electromyography; cranial nerve supplied muscle(s), unilateral

95868: Needle electromyography; cranial nerve supplied muscles, bilateral

95869: Needle electromyography; thoracic paraspinal muscles (excluding T1 or T12)

95870: Needle electromyography; limited study of muscles in one extremity or non-limb (axial) muscles (unilateral or bilateral), other than thoracic paraspinal, cranial nerve supplied muscles, or sphincters

95872: Needle electromyography using single fiber electrode, with quantitative measurement of jitter, blocking and/or fiber density, any/all sites of each muscle studied

95900: Nerve conduction, amplitude and latency/velocity study, each nerve; motor, without F-wave study.

95903: Nerve conduction, amplitude and latency/velocity study, each nerve; motor, with F-wave study

95904: Nerve conduction, amplitude and latency/velocity study, each nerve; sensory

(Use the List of Nerves on pages 15 and 16 to properly code 95900, 95903, and/or 95904)

95920: Intraoperative neurophysiology testing, per hour (List separately in addition to code for primary procedure)

95921: Testing of autonomic nervous system function; cardiovagal innervation, (parasympathetic function), including two or more of the following: heart rate response to deep breathing with recorded R-R interval, Valsalva ratio, and 30:15 ratio

95922: Testing of autonomic nervous system function; vasomotor adrenergic innervation, (sympathetic adrenergic function), including beat-to-beat blood pressure and R-R interval changes during Valsalva maneuver and at least 5 minutes of passive tilt

95923: Testing of autonomic nervous system function; sudomotor, including one or more of the following: quantitative sudomotor axon reflex test (QSART), silastic sweat imprint, thermoregulatory sweat test, and changes in sympathetic skin potential.

95925: Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in upper limbs

95926: Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in lower limbs

95927: Short-latency somatosensory evoked potential study, stimulation of any/all peripheral nerves or skin sites, recording from the central nervous system; in the trunk or head

95928: Central motor evoked potential study (transcranial motor stimulation); upper limbs

95929: Central motor evoked potential study (transcranial motor stimulation); lower limbs

95933: Orbicularis oculi (blink) reflex, by electrodiagnostic testing

95934: H-reflex, amplitude and latency study; record gastrocnemius/soleus muscle

95936: H-reflex, amplitude and latency study; record muscle other than gastrocnemius/soleus muscle

95937: Neuromuscular junction testing (repetitive stimulation, paired stimuli), each nerve, any one method

Acceptable Diagnostic Codes

The AANEM publishes a coding guide that contains ICD-9-CM codes of relevance to electrodiagnostic medicine. A greatly condensed version of this document, *Selected ICD-9-CM Codes: By Diagnosis*, lists the codes most often used in EDX consultations. At a minimum, any list of acceptable diagnoses should include all the diagnoses in *Selected ICD-9-CM Codes: By Diagnosis* with a note that additional diagnoses may be considered with accompanying documentation. Because EDX testing in some patients does not establish an etiologic diagnosis, any list of ICD-9-CM codes for electrodiagnostic testing must include symptom codes (such as weakness, pain, or altered sensation), as well as codes for defined diseases.

CPT Codes 95900-95904: Nerve Conduction Studies

Overview

1. NCSs (CPT codes 95900-95904) are performed to assess the integrity and diagnose diseases of the peripheral nervous system. Specifically, they assess the speed (conduction velocity, and/or latency), size (amplitude), and shape of the response. Pathological findings include conduction slowing, conduction block, no response, and/or low amplitude response. NCS results can assess the degree of demyelination and axon loss in the segments of the nerve studied. This portion of the EDX consultation is performed by the physician alone or by a trained allied health professional under direct supervision of a physician trained in electrodiagnostic medicine.
2. A typical NCS examination includes the following:
   a. Development of a differential diagnosis by the EDX consultant, based upon appropriate history and physical examination.
   b. NCS of a number of nerves by recording and studying the electrical responses from peripheral nerves or the muscles they innervate, following electrical stimulation of the nerve. Usually surface electrodes are used for both stimulation and recording, though needle electrodes may be required in special cases.
   c. Completion of indicated needle EMG studies (see below) to evaluate the differential diagnosis and to complement the NCSs.
3. Motor, sensory, and mixed NCSs and late responses (F-wave and H-reflex studies) are frequently complementary and performed during the same patient evaluation.
4. Although the stimulation of nerves is similar across all NCSs, the characteristics of motor, sensory, and mixed NCSs are different and are discussed separately below. In each case, an appropriate nerve is stimulated and recording is made either from the appropriate nerves or from muscle supplied by the motor nerve.
   a. Motor NCSs (CPT codes 95900 and 95903) are performed by applying electrical stimulation at various points along the course of a motor nerve while recording the electrical response from an appropriate muscle. Response parameters include amplitude, latency, configuration, and motor conduction velocity.
   b. Sensory NCSs (CPT code 95904) are performed by applying electrical stimulation near a nerve and recording the response from a distant site along the nerve. Response parameters include amplitude, latency, configuration, and sensory conduction velocity.
   c. Mixed NCS (CPT code 95904-this may still be used to code for mixed studies, even though the reference to "mixed" was dropped from the descriptor) are performed by applying electrical

stimulation near a nerve containing both motor and sensory fibers (a mixed nerve) and recording from a different location along that nerve that also contains both motor and sensory nerve fibers. Response parameters include amplitude, latency, configuration, and both sensory and motor conduction velocity.

5. NCS reports should document the nerves evaluated, the distance between the stimulation and recording sites, the conduction velocity, latency values, and amplitude. The temperature of the studied limbs may be included. A final diagnosis, which, in some cases, may be a symptom diagnosis or a diagnosis of normal, is then made.

   It is possible to include a hard copy of these studies as part of the medical chart; however, in most situations it does not add useful information to the report of the EDX consultant. Requiring hard copy as a condition for reimbursement is generally unnecessary and burdensome. A legitimate reason to make a request for the hard copy of neurophysiological data is to permit an independent expert to review the original material to provide an independent interpretation of the findings. There are clinical (second opinion) and medical-legal (dispute over the diagnosis) situations in which this type of review is indicated, although there are limitations to later interpretation of the hard copy. Other reasons for requesting hard copy may be if questions of over-utilization are at issue, or significant concerns exist regarding fraud and abuse. Anyone requiring hard copy of neurophysiologic data must notify the physician ahead of time, as many physicians do not store this data.

6. The number of nerves tested should be the minimum necessary to address the clinical issue. In almost all studies, this will appropriately include evaluation of 1 or more nerves that have normal test results.

7. Because the EDX evaluation is tailored to the individual patient, it is inappropriate to identify set numbers of acceptable studies for a given diagnosis. However, practice parameters and professional guidelines define general principles, and the AANEM's *The Electrodiagnostic Medicine Consultation* is useful in this regard. One mechanism for gauging utilization is to compare a practitioner's practice patterns against other physicians. Physicians who regularly (>10% of the time) differ from established norms might be asked to provide information about the characteristics of their patient population or practice style.

8. The CPT descriptor language, "Report 95900, 95903, and/or 95904 only once when multiple sites on the same nerve are stimulated or recorded" clarifies that "1 nerve" in the 3 nerve conduction CPT codes includes all different stimulation sites along the individual motor, sensory, or mixed nerves that are tested. To qualify as a single NCS refer to the List of Nerves on pages 15 and 16. Each line on the list of nerves refers to a different nerve and should be billed as an individual unit. It is inappropriate to bill more than one unit for "inching" or studying the same nerve by moving the stimulating electrode closer to the recording electrode. It should be noted that most nerves have a contralateral counterpart; bilateral testing is often necessary for comparison purposes and the nerve on each side may be billed separately. In addition, motor (CPT code 95900 or 95903), sensory (CPT code 95904), and mixed sensory (CPT code 95904) studies on an individual nerve are appropriately carried out and billed separately.

9. CPT codes 95903 and 95900 may appropriately be billed together for the same patient on the same day of service when multiple nerves are tested, some with and some without F waves, because in that case they describe 2 distinct and independent services provided on the same day. However, CPT codes 95903 and 95900 cannot be billed together for the same nerve in a given patient on a given day. It is appropriate to add modifier -59 when billing 95900 and 95903 to indicate separate and distinct procedures on the same patient on the same day.

CPT Codes 95860-95870: Needle Electromyography

Overview

1. Needle EMG (CPT codes 95860-95870) is performed to exclude, diagnose, describe, and follow diseases of the peripheral nervous system and muscle. Needle EMG refers to the recording and study of electrical activity of muscle using a needle electrode. This portion of the EDX consultation should always be performed by the physician.

2. A typical EMG examination includes the following:

   a. Development of a differential diagnosis by the EDX consultant, based upon appropriate history and physical examination.

   b. Completion of indicated NCSs (see above) to evaluate the differential diagnosis and to complement the needle EMG studies.

   c. Needle EMG testing of selected muscles. This is accomplished by inserting a needle electrode into appropriate muscles, one at a time.

The needle electrode allows the muscle's electrical characteristics at rest and during activity to be interpreted by the EDX consultant. This interpretation includes analysis of oscilloscope tracings and the characteristic sounds produced by electrical potentials. The final interpretation of the study is a synthesis by the EDX consultant of the patient's history, physical examination, and the preceding and following portions of the study.

3. The muscles studied will vary depending upon the differential diagnosis and the ongoing synthesis of new information obtained by the EDX consultant while the test is being performed.
4. Needle EMG studies are interpreted in real time, as they are being performed. Most electromyographic machines are unable to permanently copy the sounds produced during needle EMG testing. In addition, it is difficult and quite expensive to permanently copy needle EMG oscilloscope tracings. For this reason, these tracings should not be required.
5. Normal findings and abnormalities uncovered during the study are documented and interpreted. Needle EMG reports should document the muscles tested, and report the presence and type of spontaneous activity, as well as the characteristics of the voluntary unit potentials. A final diagnosis, which, in some cases, may be a symptom diagnosis or a diagnosis of normal, is made.

CPT Codes 95860-95864: Extremity Needle Electromyography Studies

1. One unit of service, billed with any of the codes, 95860-95864 includes all muscles tested in a particular extremity or extremities, with or without related paraspinal muscles. In some instances, evaluation of the paraspinal musculature may either be contraindicated or not feasible. Some examples may include but are not limited to:

   (1) patients with disorders of coagulation or on anticoagulation medications, (2) history of surgery in paraspinal muscles, (3) infection in the paraspinal muscle region, (4) patient refusal, (5) inability to position a ventilator-dependent patient, and (6) diagnosis of a condition which eliminates the need to evaluate paraspinal muscles.

   The ultimate decision about the indication for paraspinal examination should be left to the EDX consultant, as is the decision about what other muscles should be examined.
2. Only 1 unit of service of codes 95860-95864 may be reported per patient for a given examination.
3. CPT codes 95860-95864 should be used for reporting complete studies of the extremities. These codes require evaluation of extremity muscles innervated by 3 nerves (for example, radial, ulnar, median, tibial, peroneal, femoral, not sub-branches) or 4 spinal levels, with a minimum of 5 muscles studied per limb.
4. Codes 95860-95864 can appropriately be reported in combination with CPT code 95869 (Needle electromyography; thoracic paraspinal muscles) only if paraspinals between T3-T11 are studied. If this occurs in more than 20% of cases, the payor may wish to consult with the provider in order to better understand the necessity of performing both of these tests. CPT code 95869 may not be billed with CPT codes 95860-95864 if only T1 and/or T2 are studied when an upper extremity was also studied.
5. The physician's report should identify the muscles tested. Characteristics of the examination should be noted as described in the overview of needle EMG above.

CPT Codes 95867 and 95868: Needle Electromyography, Cranial Nerve Supplied Muscles

1. CPT code 95867 is used for the needle examination of 1 or more muscles supplied by cranial nerves on 1 side of the body. CPT code 95868 is used for the needle examination of 1 or more muscles supplied by cranial nerves on both sides of the body. These 2 CPT codes should not be reported together.
2. The physician's report should identify the muscles tested. Characteristics of the examination should be noted as described in the overview of needle EMG above.

CPT Code 95869: Needle Electromyography; Thoracic Paraspinal Muscles

1. CPT code 95869 should be used when exclusively studying thoracic paraspinal muscles.
2. One unit can be billed, despite the number of levels studied or whether unilateral or bilateral.
3. Characteristics of the examination should be noted as described in the overview of needle EMG above.

CPT Code 95870: Needle Electromyography; Limited Study of Muscles in One Extremity or Non-limb (Axial) Muscles (Unilateral or Bilateral), Other Than Thoracic Paraspinal, Cranial Nerve Supplied Muscles, or Sphincters

1. Code 95870 is used for limited testing of specific muscles during an examination. This code should be used only when the muscles tested do not fit more appropriately under another CPT code.
2. Code 95870 can be billed at 1 unit per extremity. The code can also be used for muscles on the thorax or abdomen (unilateral or bilateral). One unit may be billed for studying cervical or lumbar paraspinal muscles (unilateral or bilateral), regardless of the number of levels tested.
3. Multiple units of CPT code 95870 may be billed in a single study. However, if an individual physician's practice pattern reveals that multiple units of this code are used in more than 20% of the provider's needle EMG studies, the payor may wish to consult with the provider in order to better understand the necessity of providing multiple units of this service. In such cases, peer review of this pattern may be appropriate.
4. The physician's report should identify the muscles tested. Characteristics of the examination should be noted as described in the overview of needle EMG above.
5. CPT code 95870 may be billed with 95860-95864 if a limited study is performed in conjunction with a full-limb.

CPT Code 95872: Single Fiber Electromyography

1. In single-fiber electromyography (SFEMG), a specially designed needle electrode is used to record and identify action potentials (APs) from individual muscle fibers. These recordings are used to calculate the neuromuscular jitter and the muscle fiber density (FD). Jitter is the variability in time between activation of the motor nerve and generation of the muscle fiber AP, and reflects the normality of nerve-muscle transmission. Jitter may be assessed by measuring the time variability between APs from 2 muscle fibers in the same voluntarily activated motor unit, or by stimulating the motor axon and measuring the variability between stimulus and APs in the responding muscle fibers.

   Normal jitter varies among muscles and among muscle fibers within individual muscles, but is generally in the range of 10 to 50 μs. To determine if jitter is abnormally increased, statistical analysis is performed on the results from recordings from a population of muscle fibers within each tested muscle. When neuromuscular transmission is sufficiently abnormal that nerve activation produces no muscle AP, blocking is seen. Increased jitter, blocking, or both, may occur in a variety of conditions, including primary disorders of neuromuscular transmission.
2. FD is a measurement of the mean number of muscle fibers belonging to the same motor unit detected by the SFEMG electrode at a number of different insertion sites during voluntary activation of the motor unit.
3. Needle EMG should be performed in at least 1 clinically involved muscle before attributing pathologic jitter or blocking to a neuromuscular transmission disorder.
4. The results of jitter testing in each muscle are reported as the mean jitter among all pairs of APs recorded during voluntary activation (or the mean jitter of all APs recorded during axonal stimulation), the percentage of pairs (or APs) in which blocking was seen, and the percentage of pairs (or APs) in which jitter was normal. FD is reported as the mean number of muscle fibers per motor unit at 20 recording sites for each muscle tested.
5. Jitter and FD may be measured in 1 or more muscles depending on the condition being evaluated and the results of testing.
6. The physician's report should identify the muscles tested. Characteristics of the examination should be noted as described in the overview of needle EMG above, as well as specific discussion about the presence or absence of jitter and other abnormalities in the muscles tested.

CPT Code 51785: Needle Electromyography of Anal or Urethral Sphincter, Any Technique

1. Under specific circumstances in which there is suspicion of injury to the sacral roots of the spinal cord, separate study of the anal sphincter is required since this is the only muscle accessible to needle EMG examination which receives its innervation through these roots. This testing may also be performed to assess the innervation and anatomic integrity of the sphincters.
2. In investigations of the function of the sacral roots, needle EMG study of the anal sphincter can be combined with electrically-elicited measurement of the bulbocavernosus reflex latency (CPT code 51792).

3. The physician's report should identify the muscles tested. Characteristics of the examination should be noted as described in the overview of needle EMG above.

Late Responses: H-Reflex and F-Wave Studies

Overview

1. Late responses are performed to evaluate nerve conduction in portions of the nerve more proximal (near the spine) and, therefore, inaccessible to direct assessment using conventional techniques. Electrical stimulation is applied on the skin surface near a nerve site in a manner that sends impulses both proximally and distally. Characteristics of the response are assessed, including latency.
2. F-wave and H-reflex studies provide information in the evaluation of radiculopathies, plexopathies, polyneuropathies (especially with multifocal conduction block or in suspected Guillain-Barré syndrome or chronic inflammatory demyelinating polyneuropathy), and proximal mononeuropathies. In some cases, they may be the only abnormal study.
3. The physician's report should identify the nerves evaluated and the F-wave and H-reflex characteristics, including latency.

CPT Codes 95934 and 95936: H-Reflex Studies

1. CPT codes 95934 and 95936 are defined as unilateral H-reflex study codes and are intended to be reported per study. Typically, only two H-reflex studies are performed in a given examination.
2. H-reflex studies usually must be performed bilaterally because symmetry of responses is an important criterion for abnormality. When a bilateral H-reflex study is performed, the entire procedure must be repeated, increasing examiner time and effort; there are no economies of scale in multiple H-reflex testing. A bilateral H-reflex study should be reported by appending modifier "-50 Bilateral Procedure," to the CPT code reported.
3. H-reflex studies usually involve assessment of the gastrocnemius/soleus muscle complex in the calf (CPT code 95934). Bilateral gastrocnemius/soleus H-reflex abnormalities are often early indications of spinal stenosis, or bilateral S1 radiculopathies.
4. In rare instances, H-reflexes need to be tested in muscles other than the gastrocnemius/soleus muscle, for example, in the upper limbs. In conditions such as cervical radiculopathies or brachial plexopathies, an H-reflex study can be performed in the arm (flexor carpi radialis muscle). Other muscles that may be tested, although rarely, are the intrinsic small muscles of the hand and foot. These cases would be coded using CPT code 95936.

CPT Code 95903: Nerve Conduction Study With F-Wave Study

F-wave studies are billed in combination with the motor nerves that are examined (CPT code 95903). Although the set-up for an F-wave study is similar to the set-up for a motor NCS, the testing is performed separately from motor NCSs, utilizing different machine settings and separate stimulation to obtain a larger number of responses (at least 10).

1. The number of F-wave studies which need to be performed on a given patient depends on the working diagnosis and the EDX findings already in evidence. It may be appropriate in the same patient to perform some motor NCSs with an F wave and others without an F wave.

CPT Code 95933: Blink Reflexes

Overview

1. The blink reflex (CPT code 95933) is an electrophysiologic analog of the corneal reflex. The latency of the responses, including side-to-side differences, can help localize pathology in the region of the fifth or seventh cranial nerves, or in the brainstem. The latencies and amplitudes of directly elicited facial motor responses should be determined to exclude a peripheral abnormality if the blink reflexes are abnormal.
2. Recordings should be made bilaterally with both ipsilateral and contralateral stimulation.
3. The report of this study should include the presence or absence of the R1 and R2 components on both sides and the latencies of recorded R1 and R2 components.

CPT Code 95937: Neuromuscular Junction Studies

Overview

1. Repetitive stimulation studies (CPT code 95937) are used to identify and to differentiate disorders of the NMJ. This test consists of recording muscle responses to a series of nerve stimuli (at variable rates), both before, and at various intervals after, exercise or transmission of high-frequency stimuli.
2. These codes may be used in association with motor and sensory NCSs of the same nerves and are reimbursed separately.

3. When this study is performed, the physician's report should note characteristics of the test, including the rate of repetition of stimulations, and any significant incremental or decremental response.

CPT Codes 95925-95927: Somatosensory Evoked Potentials

Overview

Somatosensory Evoked Potentials (SEP's) (CPT codes 95925, 95926, and 95927) are an extension of the electrodiagnostic evaluation and can be used to test conduction in various sensory fibers of the peripheral and central nervous systems. SEPs may be used to assess the functional integrity of the central and peripheral sensory pathways.

Common diagnoses in electrodiagnostic medicine where SEPs have demonstrated usefulness include but are not limited to the following: spinal cord trauma, subacute combined degeneration, nontraumatic spinal cord lesions (e.g., cervical spondylosis), multiple sclerosis, spinocerebellar degeneration, myoclonus, coma, and intraoperative monitoring of spinal cord, brainstem, and brain sensory tracts. Intraoperative SEP monitoring is indicated for selected spine surgeries in which there is a risk of additional nerve root or spinal cord injury. Indications for SEP monitoring may include, but are not limited to, complex, extensive, or lengthy procedures, and when mandated by hospital policy. However, intraoperative SEP monitoring may not be indicated for routine lumbar or cervical root decompression.

SEPs are noninvasive studies performed by repetitive submaximal stimulation of a sensory or mixed sensorimotor peripheral nerve and recording the averaged responses from electrodes placed over proximal portions of the nerve stimulated, plexus, spine, and scalp. Amplitude, peak, and interpeak latency measurements with side-to-side comparisons are used to assess abnormalities.

1. The SEP study codes are separated into upper and lower limbs. A maximum of two codes are to be submitted for all upper or lower limb studies performed on a given patient on a given day. SEP study codes are defined as bilateral studies. A unilateral study using CPT codes 95925, 95926, or 95927 should be reported with modifier "-52, Reduced Services."
2. Depending on the clinical condition being investigated, several nerves in 1 extremity may have to be tested and compared with the opposite limb.
3. The physician's SEP report should note which nerves were tested, latencies at various testing points, and an evaluation of whether the resulting values are normal or abnormal.

Autonomic Nervous System Function Testing

Overview

The purpose of autonomic nervous system function testing is to determine the presence of autonomic dysfunction, the site of autonomic dysfunction, and the various autonomic systems which may be disordered.

CPT Code 95921: Cardiovagal Innervation

Cardiovagal innervation tests provide a standardized quantitative evaluation of vagal innervation to the heart (parasympathetic function). The responses are based on the interpretation of changes in continuous heart rate recordings in response to standardized maneuvers. Impairment occurs in autonomic failure due to diseases such as Shy-Drager syndrome, idiopathic orthostatic hypotension, diabetic neuropathy, and other neuropathies affecting autonomic nerves.

CPT Code 95922: Vasomotor Adrenergic Innervation

Vasomotor adrenergic innervation evaluates adrenergic innervation of the circulation and of the heart in autonomic failure due to diseases such as Shy-Drager syndrome, idiopathic orthostatic hypotension, diabetic neuropathy, and other neuropathies affecting autonomic nerves.

CPT Code 95923: Evaluation of Sudomotor Function

Sudomotor function can be evaluated using any of the following methods:

1. A quantitative sudomotor axon reflex test (QSART) is a noninvasive test that evaluates the integrity of the distal postganglionic sympathetic nerve fibers which may be impaired in diabetic and other neuropathies affecting autonomic nerves and in progressive autonomic disorders. This test involves the stimulation of sympathetic nerve fibers to the sweat glands at standard sites by the iontophoresis of acetylcholine and measuring the evoked sweat response by sudorometers. The test is performed optimally on 1 forearm site and 3 sites on the lower extremities in order to determine the severity and distribution of the sympathetic deficit.
2. The silastic sweat imprint differs from QSART in that the recording is an imprint of the sweat droplets appearing as indentations on silastic material.

3. The thermoregulatory sweat test is a test of sympathetic nerves that supply the skin. The skin is dusted with an indicator powder which changes color when the patient sweats in response to raising the patient's temperature by raising the ambient temperature in a heat cabinet.
4. Sympathetic peripheral autonomic skin (or surface) potentials (PASPs) are evoked by electrical stimulation (of the skin) and electric potential recordings are made over the palm and soles of the feet. The PASP change is carried by autonomic nerve fibers and evaluates if these fibers are working normally.
5. When these evaluative tests are conducted, the physician's report should state which test(s) was/were conducted and whether the test results were normal or abnormal.

Maximum Number of Tests Necessary in 90% of Cases

Table 1, "Maximum Number of Studies," summarizes the AANEM's recommendations regarding a reasonable maximum number of studies per diagnostic category necessary for a physician to arrive at a diagnosis in 90% of patients with that final diagnosis. The numbers in the table are to be used as a tool to detect outliers so as to prevent abuse and overutilization. Each number in the "Maximum Number of Studies Table" represents 1 study or unit. The maximum numbers, as shown in the table, are designed to apply to a diversity of practice styles, as well as practice types, including those at referral centers where more complex testing is frequently necessary. In simple, straightforward cases, fewer tests will be necessary. This is particularly true when results of the most critical tests are normal. In complex cases, the maximum numbers in the table will be insufficient for the physician to arrive at a complete diagnosis. In cases where there are borderline findings, additional tests may be required to determine if the findings are significant.

The appropriate number of studies to be performed should be left to the judgment of the physician performing the EDX evaluation; however, in the small number of cases which require testing in excess of the numbers listed in the table (the AANEM estimates 10% of cases), the physician should be able to provide supplementary documentation to justify the additional testing. Such documentation should explain what other differential diagnostic problems needed to be ruled out in that particular situation. In some patients, multiple diagnoses will be established by EDX testing and the recommendations listed in Table 1 for a single diagnostic category will not apply. It should be noted that in some situations it is necessary to test an asymptomatic contralateral limb to establish normative values for an individual patient. Normal values based on the general population alone are less sensitive than this approach, therefore restrictions on contralateral asymptomatic limb testing will reduce the sensitivity of electrodiagnostic tests.

Carpal Tunnel Syndrome

For suspected carpal tunnel syndrome (CTS), bilateral median motor and sensory NCSs are often indicated. The studies in the contralateral asymptomatic limb serve as controls in cases where values are borderline and may establish the presence of bilateral CTS, which is a

Table 1: Maximum Number of Studies

	Needle Electromyography, CPT 95860-95864 and 95867-95870	Nerve Conduction Studies CPT 95900, 95903, 95904		Other Electromyographic Studies CPT 95934, 95936, 95937	
Indication	**Number of Services (Tests)**	**Motor NCS with And/or without F wave**	**Sensory NCS**	**H-Reflex**	**Neuromuscular Junction Testing (Repetitive stimulation)**
Carpal Tunnel (unilateral)	1	3	4		
Carpal Tunnel (bilateral)	2	4	6		
Radiculopathy	2	3	2	2	
Mononeuropathy	1	3	3	2	
Polyneuropathy/Mononeuropathy Multiplex	3	4	4	2	
Myopathy	2	2	2		2
Motor Neuronopathy (e.g., ALS)	4	4	2		2
Plexopathy	2	4	6	2	
Neuromuscular Junction	2	2	2		3
Tarsal Tunnel Syndrome (unilateral)	1	4	4		
Tarsal Tunnel Syndrome (bilateral)	2	5	6		
Weakness, Fatigue, Cramps, or Twitching (focal)	2	3	4		2
Weakness, Fatigue, Cramps, or Twitching (general)	4	4	4		2
Pain, Numbness, or Tingling (unilateral)	1	3	4	2	
Pain, Numbness, or Tingling (bilateral)	2	4	6	2	

frequent finding. Two to 4 additional sensory or mixed NCSs can be compared to the median sensory NCSs to increase the diagnostic sensitivity of the testing. The additional sensory NCSs and an additional motor NCS (usually ulnar) are indicated to exclude a generalized neuropathy or multiple mononeuropathies.

If 2 sensitive sensory NCSs are performed at the begining start, additional sensory testing on the same limb is rarely needed. For suspected bilateral CTS, bilateral median motor and sensory NCSs are indicated. Up to 2 additional motor and 2 additional sensory NCSs are often indicated. The extent of the needle EMG examination depends on the results of the NCSs and the differential diagnosis considered in the individual patient.

Additional testing may be indicated in patients with a differential diagnosis which includes peripheral neuropathy, cervical radiculopathy, brachial plexopathy, or more proximal median neuropathy.

Radiculopathy

A minimal evaluation for radiculopathy includes 1 motor and 1 sensory NCS and a needle EMG examination of the involved limb. However, the EDX testing can include up to 3 motor NCSs (in cases of an abnormal motor NCS, the same nerve in the contralateral limb and another motor nerve in the ipsilateral limb can be studied) and 2 sensory NCSs. Bilateral studies are often necessary to exclude a central disc herniation with bilateral radiculopathies or spinal stenosis or to differentiate between radiculopathy and plexopathy, polyneuropathy, or mononeuropathy. H reflexes and F waves can provide useful complementary information that is helpful in the evaluation of suspected radiculopathy and can add to the certainty of electrodiagnostic information supporting a diagnosis of root dysfunction.

Radiculopathies cannot be diagnosed by NCS alone; needle EMG must be performed to confirm a radiculopathy. Therefore, these studies should be performed together by 1 physician supervising and/or performing all aspects of the study

Polyneuropathy/Mononeuropathy Multiplex

In order to characterize the nature of the polyneuropathy (axonal or demyelinating, diffuse or multifocal) and in order to exclude polyradiculopathy, plexopathy, neuronopathy, or multiple mononeuropathies, it may be necessary to study 4 motor and 4 sensory nerves, consisting of 2 motor and 2 sensory NCSs in 1 leg, 1 motor and 1 sensory NCS in the opposite leg, and 1 motor and 1 sensory NCS in 1 arm. H-reflex studies and F-wave studies from 2 nerves may provide additional diagnostic information. At least 2 limbs should be studied by a needle EMG examination. Studies of related paraspinal muscles are indicated to exclude some conditions such as polyradiculopathy.

Myopathy

To diagnose a myopathy, a needle EMG examination of 2 limbs is indicated. To help exclude other disorders such as polyneuropathy or neuronopathy, 2 motor and 2 sensory NCSs are indicated. Two repetitive motor nerve stimulation studies may be performed to exclude a disorder of neuromuscular transmission.

Motor Neuronopathy

In order to establish the diagnosis of motor neuronopathy (for example, amyotrophic lateral sclerosis [ALS or Lou Gehrig's disease]) and to exclude other disorders in the differential diagnosis, such as multifocal motor neuropathy or polyneuropathy, up to 4 motor nerves and 2 sensory nerves may be studied.

Needle EMG of up to 4 extremities (or 3 limbs and facial or tongue muscles) is often necessary to document widespread denervation and to exclude a myopathy. One repetitive motor nerve stimulation study may be indicated to exclude a disorder affecting neuromuscular transmission.

Plexopathy

To characterize a brachial plexopathy and to differentiate it from cervical radiculopathy and mononeuropathies, it is often necessary to study all major sensory and motor nerves that can be easily studied in both upper extremities (radial, median, ulnar, and medial and lateral antebrachial cutaneous sensory; radial, median, ulnar, and possibly axillary and musculocutaneous motor) and to perform a needle EMG examination in both upper extremities. To characterize the lumbosacral plexopathy and to differentiate it from lumbar radiculopathy and mononeuropathies, it is often necessary to study all major sensory and motor nerves that can be easily studied in both lower extremities (superficial peroneal and sural sensory; peroneal and posterior tibial motor) and to perform a needle EMG examination in both lower extremities. F-wave studies in the motor nerves and soleus H reflexes also provide useful information.

Neuromuscular Junction

To demonstrate and characterize abnormal neuromuscular transmission, repetitive nerve stimulation studies should be performed in up to 2 nerves and SFEMG in up to 2 muscles. If any of these are abnormal, up to 2 motor and 2 sensory NCSs may be performed to exclude neuropathies that can be associated with abnormal neuromuscular transmission. At least 1 motor and 1 sensory

NCS should be performed in a clinically involved limb, preferably in the distribution of a nerve studied with repetitive stimulation or SFEMG. At least 1 distal and 1 proximal muscle should be studied by a needle EMG examination to exclude a neuropathy or myopathy that can be associated with abnormal repetitive stimulation studies or SFEMG. At least 1 of the muscles should be clinically involved and both muscles should be in clinically involved limbs.

Timing of Testing After an Injury

In combination, NCSs and a needle EMG examination may be most helpful when performed several weeks after the injury has occurred. However, NCSs are often useful acutely after nerve injury, for example, if there is concern that a nerve has been severed. In fact, if studies are delayed, the opportunity to precisely identify the region of injury or to intervene may be lost. In some cases, even needle EMG testing performed immediately after a nerve injury may demonstrate abnormal motor unit action potential (MUAP) recruitment and/or provide baseline information that can be helpful to document preexisting conditions, date the injury, or serve as a baseline for comparison with later studies.

Because of the variability of different nerve injuries, a standard rule on the timing of EDX testing cannot easily be established and the AANEM does not have specific recommendations in this regard. In all instances, the AANEM encourages dialogue between physicians and payors and encourages the appropriate use of the physician's clinical judgment in determining when studies are most appropriately performed and what studies should be conducted.

Frequency of Electrodiagnostic Testing in a Given Patient

There are many clinical situations where good medical management requires repeat testing, such as in the following examples:

1. **Second diagnosis**. Where a single diagnosis is made on the first visit, but the patient subsequently develops a new set of symptoms, further evaluation is required for a second diagnosis that treatment can begin.
2 **Inconclusive diagnosis**. When a serious diagnosis (e.g., ALS) is suspected but the results of the needle EMG/NCS examination are insufficient to be conclusive, follow-up studies are needed to establish or exclude the diagnosis.
3. **Rapidly evolving disease**. Initial EDX testing in some diseases may not show any abnormality (e.g., Guillain-Barré syndrome) in the first 1 to 2 weeks. An early diagnosis confirmed by repeat electrodiagnosis must be made quickly so that treatment can begin. Follow-up testing can be extremely useful in establishing prognosis and monitoring patient status.
4. **Course of the disease**. Certain treatable diseases such as polymyositis and myasthenia gravis follow a fluctuating course with variable response to treatment. The physician treating such patients needs to monitor the disease progress and the response to therapeutic interventions. The results of follow-up evaluations may be necessary to guide treatment decisions.
5. **Unexpected course or change in course of the disease.** In certain situations, management of a diagnosed condition may not yield expected results or new, questionably related problems may occur (e.g., failure to improve following surgery for radiculopathy). In these instances, reexamination is appropriate.
6. **Recovery from injury**. Repeat evaluations may be needed to monitor recovery, to help establish prognosis, and/or to determine the need for and timing of surgical intervention (e.g., traumatic nerve injury).

Repeat EDX consultation is therefore sometimes necessary and, when justifiable, should be reimbursed. Reasonable limits can be set concerning the frequency of repeat EDX testing per year in a given patient by a given EDX consultant for a given diagnosis. The following numbers of tests per 12-month period per diagnosis per physician are acceptable:

1. **Two** tests for carpal tunnel-unilateral, carpal tunnel-bilateral, radiculopathy, mononeuropathy, polyneuropathy, myopathy, and NMJ disorders.
2. **Three** tests for motor neuronopathy and plexopathy.

These limits should **not** apply if the patient requires evaluation by more than 1 EDX consultant (i.e., a second opinion or an expert opinion at a tertiary care center) in a given year or if the patient requires evaluation for a second diagnosis in a given year.

Additional studies may be required or appropriate over and above these guidelines. In such situations, the reason for the repeat study should be included in the body of the report or in the patient's chart. Comparison with the previous test results should be documented. This additional documentation from the physician regarding the necessity for the additional repeat testing would be appropriate. Repeat EDX testing should not be necessary in a 12-month period in 80% of all cases.

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 under this policy.
3. The number of tests performed should be the minimum needed to establish an accurate diagnosis.
4. NCSs 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. The needle EMG examination 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.

Conclusion

Thoughtfully written reimbursement policies will positively impact patient care. On the other hand, poorly written policies may lead to diagnostic judgments based on inadequate information. The quality of patient care will suffer, the risk of patient injury will increase due to incorrect diagnosis, misdiagnosis, or improper treatment (e.g., unnecessary surgery), and the cost of medical care will escalate. In addition, underutilization of needed diagnostic testing may cost payors money. If the physician does not get the full information needed for proper diagnosis from an initial EDX consultation because the evaluation is inadequate, the consultation may need to be repeated in a more thorough manner with additional expense. It must also be emphasized that having to justify the reasons behind each CPT unit by separate narrative will be time-consuming and expensive for physician and insurance carrier alike, and will not allow for efficient electronic claims submission.

Looking to the Future

Physicians expect that the development of practice parameters and outcome studies will profoundly influence the practice of medicine. As new EDX practice parameters and outcome studies are published, the AANEM plans to modify its guidelines as needed.

Practice parameter documents, however, may contain hierarchical decision trees that recommend modification of the planned EDX testing during the performance of the study in response to the information obtained as the study proceeds. Such a dynamic study design does not readily lend itself to a reductionistic bottom-line approach to the number of EDX studies allowed to be reimbursed per diagnosis.

The AANEM will gladly provide additional input in the future to help organizations establish medically appropriate practice guidelines for electrodiagnostic medicine from which new and improved coding and reimbursement policies could be developed.

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Endorsed by the American Academy of Physical Medicine & Rehabilitation: June 1998, March 2002, and June 2004.

List of Nerves with Added Specificity
Appendix A

Codes 95900 and 95903 involve the following nerves:

I. Upper Extremity/Cervical Plexus/Brachial Plexus Motor Nerves

A. Axillary motor nerve to the deltoid
B. Long thoracic motor nerve to the serratus anterior
C. Median nerve
   1. Median motor nerve to the abductor pollicis brevis
   2. Median motor nerve, anterior interosseou branch, to the flexor pollicis longus
   3 Median motor nerve, anterior interosseous branch, to the pronator quadratus
   4. Median motor nerve to the first lumbrical
   5. Median motor nerve to the second lumbrical
D. Musculocutaneous motor nerve to the biceps brachii
E. Radial nerve
   1. Radial motor nerve to the extensor carpi ulnaris
   2. Radial motor nerve to the extensor digitorum communis
   3. Radial motor nerve to the extensor indicis proprius
   4. Radial motor nerve to the brachioradialis
F. Suprascapular nerve
   1. Suprascapular motor nerve to the supraspinatus
   2. Suprascapular motor nerve to the infraspinatus
G. Thoracodorsal motor nerve to the latissimus dorsi
H. Ulnar nerve
   1. Ulnar motor nerve to the abductor digiti minimi
   2. Ulnar motor nerve to the palmar interosseous
   3. Ulnar motor nerve to the first dorsal interosseous
   4. Ulnar motor nerve to the flexor carpi ulnaris
I. Other

II. Lower Extremity Motor Nerves

A. Femoral motor nerve to the quadriceps
   1. Femoral motor nerve to vastus medialis
   2. Femoral motor nerve to vastus lateralis
   3. Femoral motor nerve to vastus intermedialis
   4. Femoral motor nerve to rectus femoris.
B. Iloinguinal motor nerve
C. Peroneal nerve
   1. Peroneal motor nerve to the extensor digitorum brevis
   2. Peroneal motor nerve to the peroneus brevis
   3. Peroneal motor nerve to the peroneus longus
   4. Peroneal motor nerve to the tibialis anterior
D. Plantar motor nerve
E. Sciatic nerve
F. Tibial nerve
   1. Tibial motor nerve, inferior calcaneal branch, to the abductor digiti minimi
   2. Tibial motor nerve, medial plantar branch, to the abductor hallucis
   3. Tibial motor nerve, lateral plantar branch, to the flexor digiti minimi brevis
G. Other

II. Cranial Nerves and Trunk

A. Cranial nerve VII (facial motor nerve)
   1. Facial nerve to the frontalis
   2 Facial nerve to the nasalis
   3. Facial nerve to the orbicularis oculi
   4. Facial nerve to the orbicularis oris
B. Cranial nerve XI (spinal accessory motor nerve)
C. Cranial nerve XII (hypoglossal motor nerve)
D. Intercostal motor nerve
E. Phrenic motor nerve to the diaphragm
F. Recurrent laryngeal nerve
G. Other

IV. Nerve Roots

A Cervical nerve root stimulation
   1. Cervical level 5 (C5)
   2. Cervical level 6 (C6)
   3. Cervical level 7 (C7)
   4. Cervical level 8 (C8)
B. Thoracic nerve root stimulation
   1. Thoracic level 1 (T1)
   2. Thoracic level 2 (T2)
   3. Thoracic level 3 (T3)
   4. Thoracic level 4 (T4)
   5. Thoracic level 5 (T5)
   6. Thoracic level 6 (T6)
   7. Thoracic level 7 (T7)
   8. Thoracic level 8 (T8)
   9. Thoracic level 9 (T9)
   10. Thoracic level 10 (T10)
   11. Thoracic level 11 (T11)
   12. Thoracic level 12 (T12)

C. Lumbar nerve root stimulation
   1. Lumbar level 1 (L1)
   2. Lumbar level 2 (L2)
   3. Lumbar level 3 (L3)
   4. Lumbar level 4 (L4)
   5. Lumbar level 5 (L5)

D. Sacral nerve root stimulation
   1. Sacral level 1 (S1)
   2. Sacral level 2 (S2)
   3. Sacral level 3 (S3)
   4. Sacral level 4 (S4)

Code 95904 involves the following nerves:

I. Upper Extremity Sensory and Mixed Nerves

A. Lateral antebrachial cutaneous sensory nerve
B Medial antebrachial cutaneous sensory nerve
C. Medial brachial cutaneous sensory nerve
D. Median nerve
   1. Median sensory nerve to the 1st digit
   2. Median sensory nerve to the 2nd digit
   3. Median sensory nerve to the 3rd digit
   4. Median sensory nerve to the 4th digit
   5. Median palmar cutaneous sensory nerve
   6. Median palmar mixed nerve

E. Posterior antebrachial cutaneous sensory nerve
F. Radial sensory nerve
   1. Radial sensory nerve to the base of the thumb
   2. Radial sensory nerve to digit 1

G. Ulnar nerve
   1. Ulnar dorsal cutaneous sensory nerve
   2. Ulnar sensory nerve to the 4th digit
   3. Ulnar sensory nerve to the 5th digit
   4. Ulnar palmar mixed nerve

H. Intercostal sensory nerve
I Other

II. Lower Extremity Sensory and Mixed Nerves

A. Lateral femoral cutaneous sensory nerve
B. Medial calcaneal sensory nerve
C. Medial femoral cutaneous sensory nerve
D. Peroneal nerve
   1. Deep peroneal sensory nerve
   2. Superficial peroneal sensory nerve, medial dorsal cutaneous branch
   3. Superficial peroneal sensory nerve, intermediate dorsal cutaneous branch

E. Posterior femoral cutaneous sensory nerve
F. Saphenous nerve
   1. Saphenous sensory nerve (distal technique)
   2. Saphenous sensory nerve (proximal technique)

G. Sural nerve
   1. Sural sensory nerve, lateral dorsal cutaneous branch
   2. Sural sensory nerve

H. Tibial sensory nerve (digital nerve to toe 1)
I. Tibial sensory nerve (medial plantar nerve)
J. Tibial sensory nerve (lateral plantar nerve)
K. Other

III. Head and Trunk Sensory Nerves

A. Dorsal nerve of the penis
B. Greater auricular nerve
C. Opthalmic branch of the trigeminal nerve
D. Pudendul sensory nerve
E. Suprascapular sensory nerves
F. Other

*This list has also been published in the American Medical Association's (AMA) newsletter *CPT Assistant* April 2003 issue (Volume 13, Issue4). This volume of the *CPT Assistant* can be purchased from the AMA by going to https://webstore.ama-assn.org/#2. Click on *CPT Assistant* Back Issues, search y Date, choose 2003 Issues and choose Apr 2003.

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AANEM POSITION STATEMENT

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Muscle Nerve **33:** 436–439, 2006

PROPER PERFORMANCE AND INTERPRETATION OF ELECTRODIAGNOSTIC STUDIES

American Association of Neuromuscular & Electrodiagnostic Medicine, 421 First Avenue S.W., Suite 300 East, Rochester, Minnesota 55902, USA

The American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM) has developed the following position statement in response to inquiries about: (1) physicians interpreting NCS data without any direct patient contact and without providing direct oversight over the performance of nerve conduction studies (NCSs); and (2) NCSs being utilized to diagnose patients without a complementary needle electromyography (EMG) study. The AANEM believes that electrodiagnostic studies should be performed by physicians properly trained in electrodiagnostic medicine, that interpretation of NCS data alone absent face-to-face patient interaction and control over the process provides substandard care, and that the performance of NCSs without needle EMG has the potential of compromising patient care. It is the AANEM's opinion that it is in the best interest of patients, in the majority of situations, for the needle EMG and the NCS examination to be conducted and interpreted at the same time.

This article was prepared and reviewed by the AANEM and did not undergo the separate review process of *Muscle & Nerve*.

Approved by Board of Directors of the American Association of Neuromuscular & Electrodiagnostic Medicine, September 2005.
Key words: electrodiagnostic studies; interpretation of electrodiagnostic studies; performance of electrodiagnostic studies
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APPROPRIATE PERFORMANCE OF ELECTRODIAGNOSTIC STUDIES

As discussed in more detail below, in most cases, a properly performed electrodiagnostic consultation involves using both NCS and needle EMG. The AANEM's *Recommended Policy for Electrodiagnostic Medicine* outlines the necessary steps for an appropriate electrodiagnostic consultation as follows:

1. Development of a differential diagnosis by the electrodiagnostic physician, based upon an appropriate history and physical examination performed by this physician.
2. Completion of indicated NCSs.
3. Completion of indicated needle EMG studies to evaluate the differential diagnosis and to complement the NCSs.
4. Synthesis by the electrodiagnostic physician of the patient's history and physical examination with the NCS and needle EMG data to reach the diagnosis.[1]

It is the AANEM's position that, in order to perform the steps outlined above and to ensure quality patient care, the individual performing these steps must be a physician with special training in the diagnosis and treatment of neurological and neuromuscular diseases and in the application of particular neurophysiological techniques to study these disorders.[1] The AANEM believes that physicians should receive training in neurology and/or physical medicine and rehabilitation residencies and/or fellowships that provide detailed medical education including anatomy, pathology of muscle and nerve, neuromuscular physiology, electrophysiology, and clinical aspects of neurological and musculoskeletal conditions, with particular emphasis on diagnosis and treatment of neuromuscular diseases as they

pertain to clinical electrodiagnostic medicine. The AANEM's position statement *Who Is Qualified to Perform Electrodiagnostic Medicine?* outlines the AANEM's complete educational requirements for an electrodiagnostic consultant. This document is available on the AANEM website at: www.aanem.org/practiceissues/positionstatements/Who%27s_Qualified.cfm.

APPROPRIATE PERFORMANCE OF NERVE CONDUCTION STUDIES

Nerve conduction studies are one diagnostic test used by an electrodiagnostic physician. Nerve conduction studies are performed to assess the integrity and diagnose diseases of the peripheral nervous system. Specifically, they assess the speed (conduction velocity and/or latency), size (amplitude), and shape of the response. Electrodiagnostic physicians utilize their medical training to determine which nerves to study utilizing NCSs and whether additional diagnostic testing is necessary. It is the AANEM's position that the standard of care in clinical practice dictates that using a predetermined or standardized battery of NCSs for all patients is inappropriate. It is inappropriate in the AANEM's opinion because it may be possible to obtain an accurate diagnosis with fewer studies, and a prespecified battery may not include the appropriate NCSs to determine the diagnosis.

When properly performed, the waveforms from the NCSs should be reviewed as they are obtained (on-site) prior to the patient being dismissed. This is necessary to assess whether further NCSs should be performed, as well as to determine what other diagnostic tests are necessary. It is also important that the physician review the waveforms to ensure the quality of the waveforms. Before results can be interpreted as normal or abnormal, it is important that the physician consider other factors that could be causing an apparent abnormality, such as electrical interference, improper setting, or even whether the room was too cold.

Nerve conduction study reports should document the nerves being evaluated, the distance between stimulation and recording sites, the conduction velocity, latency values, and amplitude. The electrodiagnostic physician interpreting the studies should understand each of these report components. It is important that these measurements are obtainable by the physician and that the physician understand the significance of these components in reaching a diagnosis.[1]

APPROPRIATE INTERPRETATION OF DATA FROM NERVE CONDUCTION STUDIES

The AANEM is concerned about physicians interpreting NCS data without face-to-face patient interaction, without making a decision about the nerves to be tested, and without providing direct oversight over the performance of the NCSs. As described above, to reach a diagnosis based on NCSs it is imperative that the physician should have examined the patient, designed the study based on the information obtained, in most circumstances obtain EMG results, and then integrate information from each of the above components. Individuals who interpret NCSs without any patient interaction or who rely on studies that have a delayed interpretation or have the interpretation made off-site, or individuals who interpret NCS results without the complementary information obtained from needle EMG, in the AANEM's opinion, are not meeting the standards outlined in the AANEM's *Recommended Policy for Electrodiagnostic Medicine.* As described more thoroughly below, the 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.[1]

PERFORMANCE OF NERVE CONDUCTION STUDIES WITHOUT NEEDLE ELECTROMYOGRAPHY

The AANEM is concerned that there has been a significant increase in the number of NCSs performed without a companion needle EMG test. Nerve conduction studies increased by over 30% in 1 year based on Center for Medicare and Medicaid (CMS) information.[2] Nerve conduction studies are only one component of an appropriate electrodiagnostic consultation.

When NCSs are performed without needle EMG, the additional and complementary information provided by the needle EMG results (except in limited circumstances) is not available. Without the information provided by the needle EMG examination, valuable data that may be essential in establishing an accurate diagnosis is missing. For example, performing both studies together is critically important when evaluating patients with suspected radiculopathy, plexopathy, and motor nerve or motor neuron disease. Quite often, patients with radiculopathy may have normal NCSs.[3] Some reports have indicated that a radiculopathy can be determined by F waves. However, if even a few of the large myelinated motor fibers are intact, the F-wave results will appear normal. Therefore, a patient may have a normal study

when, in fact, a radiculopathy is present.[3] Although a few articles may be cited in an attempt to justify the use of F waves in the diagnosis of radiculopathy, the current body of evidence (substantiated by multiple studies published in well-respected peer-reviewed medical journals) does not support the use of F waves in isolation to diagnose radiculopathy. The AANEM's *Recommended Policy* states that a minimal evaluation for radiculopathy should include one motor and one sensory NCS *and needle EMG* (emphasis added) of the involved limb.[1] Radiculopathy is just one example in which NCSs alone should not be used to reach a diagnosis. Patients with myopathy, plexopathy, or motor neuron disorders may have more widespread abnormalities that are only detectable by needle EMG.

Additionally, patients typically need to have both NCSs and needle EMG to ensure that an underlying medical condition is not missed. For example, in patients with carpal tunnel syndrome (CTS), other disorders can coexist, such as a radiculopathy, brachial plexopathy, or underlying peripheral neuropathy. Alternatively, there may be a problem involving the median nerve but localized at a site more proximal than the wrist. These other problems are far more likely to be misdiagnosed or missed completely if the needle EMG is not performed, and if a physician without the proper skill and training is interpreting the data, making a diagnosis, and establishing a treatment plan. Surgical release of the median nerve at the wrist, a treatment for CTS, would be an inappropriate and unnecessary procedure if the patient does not have CTS. Additionally, NCSs may be normal, but the needle EMG examination may demonstrate abnormalities that identify a more proximal nerve lesion that produces symptoms such as numbness in the hand and that may mimic CTS. For this reason, most electrodiagnostic consultants perform needle EMG in cases of suspected CTS to detect the presence of an underlying radiculopathy or other disease process.

Many patients have variations of normal innervation that cause abnormal nerve conduction values. A physician trained in electrodiagnostic medicine can recognize situations in which these seemingly abnormal values are due to normal variant innervation and can plan other NCSs to confirm the suspicion. These difficult and not uncommon clinical questions are best addressed by thorough and detailed electrodiagnostic studies that are designed, performed, and interpreted by a physician who is properly trained in electrodiagnostic medicine. If a physician trained in electrodiagnostic medicine is physically present, incorrect diagnoses and unnecessary treatments can potentially be avoided.

IMPORTANCE OF A UNIFIED PROCEDURE

It is important that the NCSs and the needle EMG examination be performed together and their results integrated into a unifying diagnostic impression. As stated above, the performance or interpretation of NCSs separately from the needle EMG component of the testing should clearly be the exception. In some cases, an NCS study will be conducted by someone who is not a trained electrodiagnostic physician (or a trained technician under the direct supervision of a trained electrodiagnostic physician) and the patient is then referred to a trained electrodiagnostic physician for assistance in diagnosing the patient. In such cases, the physician trained in electrodiagnostic medicine will usually need to repeat the NCS prior to performing needle EMG to ensure a quality study. Retesting will also be necessary to conform to the AANEM policy that only one attending physician should perform or supervise all of the components of the electrodiagnostic testing (i.e., history taking, physical evaluation, supervision or performance of the electrodiagnostic test, and interpretation) for a given patient and that in most cases all testing should occur on the same date of service. This necessary repetition of testing ensures patients receive quality care, but it wastes scarce health-care dollars and subjects the patient to unnecessary discomfort and inconvenience.

SUMMARY

The AANEM strongly recommends that electrodiagnostic procedures be performed by physicians with comprehensive knowledge of neurological and musculoskeletal disorders to assure accurate interpretation and diagnosis. Individuals without medical education in neuromuscular disorders and without special training in electrodiagnostic procedures typically are not qualified to interpret the waveforms generated by NCSs and needle EMGs or to correlate the findings with other clinical information to reach a diagnosis. It is also the AANEM's position that the same physician should directly supervise and interpret the NCSs including those performed by an electrodiagnostic technician.[1] The AANEM believes that interpreting NCSs without performing a focused history and physical and having oversight over the design and performance is inappropriate.

Nerve conduction studies performed independent of needle EMG studies may only provide a

portion of the information needed to diagnose muscle, nerve root, and most nerve disorders. For this reason, it is the position of the AANEM that, except in unique situations, NCSs and needle EMG should be performed together in a study design determined by a trained neuromuscular physician.[1] There are common diagnoses that depend on performing a needle EMG and combining the needle EMG data with the NCS data. Needle EMG studies are a necessary part of the evaluation in the diagnosis of myopathy, radiculopathy, plexopathy, disorders of the motor neuron, and most disorders of the peripheral motor nerves. When the NCS is used on its own without integrating needle EMG findings or when an individual relies solely on a review of NCS data, the results can often be misleading, and important diagnoses may be missed. Patients may thus be subjected to incorrect, unnecessary, and potentially harmful treatment interventions.

The AANEM is concerned that utilizing only NCSs to make health-care decisions provides incomplete diagnostic information, leading to inadequate or inappropriate therapy for some patients, and may waste scarce health-care dollars.

Further information about electrodiagnostic medicine may be found in the AANEM's *Guidelines in Electrodiagnostic Medicine* (*Muscle & Nerve* 22, Supplement 8). In addition, the following brochures may be obtained through the AANEM Executive Office: *What Is Electrodiagnostic Medicine? An Information Brochure for Patients Undergoing Electrodiagnostic Medicine Testing* and the *Electrodiagnostic Medicine Consultation: AANEM Resource Guide for Referring Physicians.*

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3. Werner RA, Cavender GD: Evaluating radiculopathy: how useful is electrodiagnostic testing? Phys Med Rehabil: State of the Art Reviews 1999;13:251–261.

Submitter :

Date: 09/22/2006

Organization :

Category : Physician

Issue Areas/Comments

GENERAL

GENERAL

September 19, 2006

Office of the Administrator
Centers for Medicare and Medicaid Services
Department of Health and Human Services
Mail Stop C4-26-05
7500 Security Boulevard
Baltimore, MD 21244-1850

Attention: Physician Fee Schedule Rule# CMS-1321-P

Dear Administrator:

Thank you for the opportunity to provide comments about the Centers for Medicare and Medicaid Services proposed rule #CMS-1321-P that was published in the Federal Register on August 23, 2006. This letter is written to share my concerns regarding the proposed reduction in professional fees for radiation / oncology brachytherapy services.

Access to Brachytherapy is critical. The reduction CMS is proposing will have a detrimental impact on my ability to offer the Brachytherapy / Partial Breast Irradiation Therapy treatment option to my Medicare patients.

Brachytherapy allows the radiation process to move quickly so that other treatments such as chemotherapy can be started in a timely fashion. The preparation and effort for treatment planning is quite time consuming. Proper catheter placement must be confirmed before each fraction is given. The CMS proposed reduction to all brachytherapy codes, especially CPT 77781, will not adequately cover the time and involvement required to prepare a patient for brachytherapy. If the reduction does take place, CMS will be limiting access to brachytherapy for Medicare patients.

With the prevalence of breast cancer, I urge CMS to reconsider the proposed Work RVU reduction for brachytherapy. Please leave brachytherapy codes as they currently stand, and, if needed, make a reduction to the conversion factor. I appreciate your careful review and analysis of this important matter. I strongly urge CMS to reconsider the significant, negative impact that would result from the proposed reductions.

Regards,

Harvey Greenberg, MD
H. Lee Moffitt Cancer Center & Research Institute

cc: Senator Mike Enzi, Chair, Senate Health, Education, Labor and Pensions Committee
Senator Dianne Feinstein, Co-Chair, Senate Cancer Committee
Senator Sam Brownback, Co-Chair, Senate Cancer Committee
Senator Thad Cochran, Chairman, Senate Appropriations Committee
Representative Michael Bilirakis, Energy and Commerce Health Subcommittee
Representative Ginny Brown-Waite, Co-Chair, Congressional Caucus for Women s Issues
Representative Katherine Harris, Member House Cancer Caucus
Representative Ileana Ros-Lehtinen, Vice Chair, Congressional Caucus for Women s Issues
Carolyn Mullen, Deputy Director, Division of Practitioner Services
James Rubenstein, MD, Chairman, American College of Radiation Oncology
Prabhakar Tripuraneni, MD, Chair, American Society of Therapeutic Radiation Oncology
W. Robert Lee, MD, President, American Brachytherapy Society

CMS-1321-P-267-Attach-1.DOC

Attach #
267

H. LEE MOFFITT Cancer Center & Research Institute
The End Of Cancer Begins Here.
A National Cancer Institute Comprehensive Cancer Center
At the University of South Florida

September 19, 2006

Office of the Administrator
Centers for Medicare and Medicaid Services
Department of Health and Human Services
Mail Stop C4-26-05
7500 Security Boulevard
Baltimore, MD 21244-1850

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