

Update: Management Issues for Women with Epilepsy—Focus on Pregnancy: Teratogenesis and Perinatal Outcomes

Case Presentation

A 30-year-old right-handed female presents to the neurology clinic for follow-up for her epilepsy. She is an established patient in your practice. She has a history of juvenile myoclonic epilepsy (JME) diagnosed in her 20s. She is not well controlled on her current medication therapy. She has an average of four generalized seizures a year and intermittent focal myoclonus. She has not had a seizure in over 4 months. She is interested in getting pregnant. She is here for advice about medication management of seizures during her pregnancy. She has not been pregnant before. She has no other medical problems. She has had no prior surgeries. She is taking valproic acid (VPA). She has no allergies. She does not smoke and does not drink. She is married with no children at this time. There is no family history of epilepsy or any other neurological illness.

Review of systems is negative for cognitive difficulties, vision difficulties, or swallowing difficulties. She denies difficulties with shortness of breath, chest pain, constipation, or diarrhea. She is having no joint difficulties, rashes, or bleeding difficulties. She denies depression, anxiety, allergic reactions, or hematologic, endocrine, or urinary complaints.

On physical examination she is a well-developed and well-nourished female in no acute distress. Her blood pressure is 110/70, pulse is 80, respiratory rate is 14, and temp is 98.5. No bruits are heard over her neck. There are no murmurs or abnormal heart sounds. She has good radial pulses. She is alert and oriented to person, place, date, and situation. Her memory is intact for recent and remote events. Her language is fluent, and she has no difficulties with naming. She is able to follow commands. She has good attention and normal fund of knowledge.

Cranial nerves reveal a normal fundoscopic examination with normal disc visualized, PERRLA, extraocular muscles intact, and visual fields full to confrontation. Facial sensation and motor strength are symmetric bilaterally. Hearing is intact bilaterally to finger rub. Palate, tongue, and uvula are midline. Sternocleidomastoid and trapezius are 5/5 bilaterally. Motor is 5/5 throughout, with normal bulk and tone and no drift. Sensory is intact to light touch, pinprick, proprioception and vibration. Reflexes are 2/4 throughout and toes down-going. Coordination is normal to finger-to-finger, heel-to-shin bilaterally. Gait is intact to normal, toe, and heel testing. Tandem walking and Romberg are normal.

You decide to change her seizure medication to another antiepileptic medication (AED) before she gets pregnant. You discuss a plan for starting a new AED and tapering her off the VPA. She will need to be monitored closely during the transition. She may be at increased risk for seizures during this transition. You personally review her prior MRI

imaging, which was normal. Her EEG from last year is also reviewed and reveals occasional generalized 3- to 6-Hz spike and wave activity. You recommend that she visit her ob-gyn and encourage her to start supplementation with folic acid now, which she is to continue during her pregnancy.

You order baseline laboratory testing, develop and document a medication transition schedule, discuss with her the possible side effects of the new medication she will be starting, and advise her to return for follow-up in one month. You provide her with handouts on epilepsy and pregnancy and handouts on the new AED she will be starting.

You document that greater than 50% of the 45-min encounter was spent counseling her on epilepsy and pregnancy.

Questions

1. According to the AED and pregnancy guideline, to avoid major congenital malformations:

- A. A patient should be continued on her previously established medication during pregnancy, but at a lower dose.
- B. Levetiracetam should be avoided during pregnancy.
- C. VPA should be avoided during the first trimester of pregnancy.
- D. All AEDS should be avoided during pregnancy.
- E. Polytherapy should be encouraged during pregnancy.

The correct answer is C.

2. According to the AED and pregnancy guideline,¹ to prevent reduced cognitive outcomes:

- A. Reduced doses of any medication may be used safely.
- B. Carbamazepine should be avoided during pregnancy.
- C. VPA should be avoided during pregnancy.
- D. All AEDS should be avoided during pregnancy.
- E. Polytherapy should be encouraged during pregnancy.

The correct answer is C.

3. True or False: If possible, avoidance of phenytoin (PHT) and phenobarbital (PB) use during pregnancy may be considered to prevent reduced cognitive outcomes (Level C).¹

The correct answer is True.

ICD-9-CM² Discussion

This patient already has a diagnosis of JME. There is also documentation of stability on medication. JME is currently considered to be a syndrome within generalized epilepsies, and with the generalized seizures the appropriate code would be:

345.11 Generalized convulsive epilepsy, with mention of intractable epilepsy

If the patient were already pregnant, a code for pregnancy complication would be needed and would be listed first because the medication and/or change would potentially affect the pregnancy.

Evaluation and Management Coding Discussion

The established patient codes are used to bill for your services, as the patient has been previously seen in your office. The most appropriate code is level 5 established patient code 99215. In this case, this code is supported in two different ways. First, a comprehensive history and examination are performed, and high medical decision making is satisfied. Second, one can use the counseling and coordination-of-care method to bill, as more than half of a 45-minute visit (only half of a 40-minute visit is required) was spent counseling the patient on epilepsy and pregnancy, and those terms are included in the office visit note.

Seizure CPT® Procedure Coding Discussion

Routine Electroencephalography (EEG)

EEG codes 95812-95822 include hyperventilation and/or photic stimulation when appropriate. Routine EEG codes 95816-95822 include 20 to 40 minutes of recording. Extended EEG codes 95812-95813 include reporting times longer than 40 minutes.

95812	Electroencephalogram (EEG) extended monitoring; 41-60 minutes
95813	greater than one hour
95816	Electroencephalogram (EEG); including recording awake and drowsy
95819	including recording awake and asleep
95822	recording in coma or sleep only
95824	cerebral death evaluation only
95827	all night recording

(For 24-hour EEG monitoring, see 95950-95953 or 95956)

(For digital analysis of EEG, use 95957)

Special EEG Tests

95950	Monitoring for identification and lateralization of cerebral seizure focus, electroencephalographic (e.g., 8 channel EEG) recording and interpretation, each 24 hours
95951	Monitoring for localization of cerebral seizure focus by cable or radio, 16 or more channel telemetry, combined electroencephalographic (EEG) and video recording and interpretation (e.g., for presurgical localization), each 24 hours
95953	Monitoring for localization of cerebral seizure focus by computerized portable 16 or more channel EEG; electroencephalographic (EEG) recording and interpretation, each 24 hours
95956	Monitoring for localization of cerebral seizure focus by cable or radio, 16 or more channel telemetry, electroencephalographic (EEG) recording and interpretation, each 24 hours

95957 Digital analysis of electroencephalogram (EEG) (e.g., for epileptic spike analysis)

Electroencephalography: Coding Tips

Note that hyperventilation and photic stimulation procedures are not a mandatory part of EEG testing using codes 95812 through 95822. They are to be performed only when medically appropriate and not otherwise contraindicated. Hyperventilation and photic stimulation are bundled into the EEG service whenever they are performed—they cannot be coded separately.

Code 95819 is not any routine EEG; it is for a planned awake/asleep study with or without sedation. Use code 95819 if an awake/asleep study was intended, even if patient did not sleep.

Use code 95816 if an awake-only study is planned. However, one may up code to 95819 if the patient falls asleep and the recording time is sufficient.

95822 (“coma and sleep” EEG) can be used for patients who are:

- Anesthetized
- Neonates

FAQs: Electroencephalography—Routine (95812–95827)

In previous years, a number of questions concerned when to use the extended monitoring EEG CPT® codes 95812 and 95813. Routine length of monitoring is now defined as lasting 20 to 40 minutes. The extended monitoring codes are to be used for monitoring times greater than 40 minutes. Code 95812 is defined as covering 41-60 min of monitoring and code 95813 is defined as covering any monitoring that is greater than one hour. Codes 95812 and 95813 can be used in place of 95816, 95819 or 95822 but are not to be billed together with them.

What is the minimum number of channels or electrodes to be used in order to report codes 95812, 95813, 95955 and 95822?

One has to meet the minimum technical standards for an EEG test, not only with a minimum of 20 minutes of monitoring, but also with a minimum of eight channels and other rules as set forth by national organizations such as the American Clinical Neurophysiology Society (ACNS) <<http://www.acns.org/>>.

What is the difference between code 95816 (EEG recording including awake and drowsy) and code 95819 (EEG recording including awake and asleep)?

Code 95819 should be used if the patient has fallen asleep; if that is not the case, then code 95816 should be used. However, the line between drowsy and asleep can often be difficult to determine, and it is permissible to use code 95819 if a sleep study was intended but, despite the best efforts of the technician, sleep was not obtained.

Is there an extra code to bill for an EEG with video monitoring equipment?

Some new EEG machines have video monitoring equipment to be trained on patients when they get regular EEGs. The purpose is to record what the patient was doing during the routine EEG for clinical correlation purposes. There is no extra fee or code for using

the video in this context. The code to be used is the same one used for EEG without video.

FAQs: Electroencephalography—Long-Term Monitoring (95950–95956)

Most of these codes are reported for “each 24 hours,” and one of the most common questions regarding these codes is what to do if the monitoring is less than 24 hours (e.g., 8 hours, 10 hours). According to the American Academy of Neurology (AAN) and the ACNS, more than half of the 24 hours of monitoring is adequate to allow use of these codes. If the recording time is less than 12 hours, one should bill the appropriate monitoring code with modifier 52 to indicate that the time of service was reduced (as described in the CPT® book) and one must also list the actual number of hours that the study was performed. *Principles of CPT® Coding*, Fifth Edition, states: “Video-EEG monitoring (95951) is used for prolonged monitoring of seizures. Usually, the coded procedure lasts 24 hours. Sometimes the monitoring is shorter, e.g., because the patient was off monitoring to undergo magnetic resonance imaging. When monitoring is less than 12 hours, but more than 6 hours, use modifier 52. When monitoring is less than 8 hours, use code 95813 instead of code 95951.” (page 480) The AAN believes the phrase, “When monitoring is less than 8 hours, use code 95813...” contains a typographical error and should read, “When monitoring is less than 6 hours, use code 95813...” We are currently working with the AMA to resolve this issue. In the previous edition of *Principles of CPT® Coding* the recommended time periods were 8 hours and 15 hours instead of the current 6 hours and 12 hours. The draft of *Principles of CPT® Coding*, Sixth Edition, is currently being reviewed by the AAN and other professional societies.

FAQs: Electroencephalography—Digital EEG Analysis (95957)

Code 95957 should not be used simply when the EEG was recorded digitally. There is no additional charge for turning on an automated spike and seizure detector on a routine EEG, ambulatory EEG, or video-EEG monitoring. Nor is there an additional code for performing EEG on a digital machine instead of an older-generation analog machine. Some features of digital EEG make it easier and quicker to read, and other features slow it down by providing new optional tricks and tools. Overall, it involves about the same amount of work as an analog EEG.

Code 95957 is used when substantial additional digital analysis was medically necessary and was performed, such as 3-D dipole localization. In general, this would entail an extra hour’s work by the technician to process the data from the digital EEG, and an extra 20 to 30 minutes of physician time to review the technician’s work and review the data produced. Most practitioners would not have the opportunity to do this advanced procedure. It would be more commonly used at specialty centers, for example, epilepsy surgery programs. Note that the codes for “monitoring for identification and lateralization of cerebral seizure focus” already include epileptic spike analysis.

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1. Harden CL, Hopp J, Ting TY, et al. Practice Parameter: Management issues for women with epilepsy—Focus on pregnancy (an evidence-based review): Obstetrical complications and change in seizure frequency: Report of the Quality Standards Subcommittee and Therapeutics and

Technology Assessment Subcommittee of the American Academy of Neurology and the American Epilepsy Society. *Neurology*® 2009;73:126–132. Epub 2009 April 27.
2. Centers for Disease Control and Prevention. International classification of diseases, ninth revision, clinical modification (ICD-9-CM). www.cdc.gov/nchs/icd/icd9cm.htm.

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