

Clinical Policy: Ambulatory Electroencephalography

Reference Number: CP.MP.96

Last Review Date: 07/20

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Description

Ambulatory electroencephalogram (EEG) testing in the outpatient setting (*e.g.*, at home) is a diagnostic test used to evaluate an individual in whom a seizure disorder or possibly nonepileptic attacks are suspected but not conclusively confirmed by the person's medical history, physical examination, and a previous routine or standard (awake and asleep) EEG. Ambulatory EEG monitoring allows extended interictal EEG recording outside of a clinic or a hospital and can allow patients to “mark” events experienced on the EEG recording.

Policy/Criteria

- I. It is the policy of health plans affiliated with Centene Corporation® that ambulatory EEG is **medically necessary** following an inconclusive or nondiagnostic standard (awake and asleep) EEG for any of the following indications:
 - A. To investigate episodic events where epilepsy is suspected but the history, examination, and routine EEG do not resolve the diagnostic uncertainties;
 - B. To confirm epilepsy in those individuals experiencing suspected nonepileptic events;
 - C. To differentiate between neurological and cardiac related episodes, such as syncope;
 - D. To characterize seizure type, such as focal versus generalized seizures, and frequency;
 - E. To localize seizure focus for enhanced patient management;
 - F. To evaluate seizures precipitated by naturally occurring cyclic events or environmental stimuli that are not reproducible in the hospital or clinic setting.

Note: Ambulatory EEG should always be preceded by an awake and drowsy/sleep EEG.

- II. It is the policy of health plans affiliated with Centene Corporation that ambulatory EEG is considered **not medically necessary** for studies of unattended, non-cooperative patients.

Background

In most instances, a standard EEG performed at a clinic or outpatient epilepsy facility can identify brain activity specific to seizures; however, when routine EEG is inconclusive and the clinical history strongly suggests seizure activity, an ambulatory EEG may be indicated. An ambulatory EEG may increase the chance of detecting an epileptiform abnormality in these individuals and significantly impact clinical management. An estimated 12% to 25% of individuals who previously had a normal or non-diagnostic routine EEG have epileptiform activity on ambulatory EEG.³

Ambulatory EEG recordings can be utilized in the evaluation and differential diagnosis of other conditions, that includes syncope, if these episodes are not diagnosed by conventional studies. It may also allow an estimate of seizure frequency, which may at times help to evaluate the effectiveness of a drug and determine its appropriate dosage.

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Ambulatory EEG testing provides a continuous recording of the brain's electrical activity that can range from several hours to up to a week (typically 48 hours to 72 hours). In the outpatient setting (physician office, clinic), a set of electrodes with leads is secured to the person's scalp and a digital recording unit is attached to the waist or a shoulder harness. Currently, portable recordings of up to 32 channels can record computer-assisted spike and seizure detection rates over several days. Event detection computer software is designed to increase the chance of recording an ictal event during a seizure or interictal epileptiform discharges occurring between seizures, during the person's routine daily activities and sleep. The person being tested and observers (family members, caregiver) have the opportunity to "tag" portions of the recording during clinical events using a push button device to signal when an observable event occurs.

Coding Implications

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2020, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

CPT® Codes	Description
95700	Electroencephalogram (EEG) continuous recording, with video when performed, setup, patient education, and takedown when performed, administered in person by EEG technologist, minimum of 8 channels
95705	Electroencephalogram (EEG), without video, review of data, technical description by EEG technologist, 2-12 hours; unmonitored
95708	Electroencephalogram (EEG), without video, review of data, technical description by EEG technologist, each increment of 12-26 hours; unmonitored
95717	Electroencephalogram (EEG), continuous recording, physician or other qualified health care professional review of recorded events, analysis of spike and seizure detection, interpretation and report, 2-12 hours of EEG recording; without video
95719	Electroencephalogram (EEG), continuous recording, physician or other qualified health care professional review of recorded events, analysis of spike and seizure detection, each increment of greater than 12 hours, up to 26 hours of EEG recording, interpretation and report after each 24-hour period; without video
95721	Electroencephalogram (EEG), continuous recording, physician or other qualified health care professional review of recorded events, analysis of spike and seizure detection, interpretation, and summary report, complete study; greater than 36 hours, up to 60 hours of EEG recording, without video
95723	Electroencephalogram (EEG), continuous recording, physician or other qualified health care professional review of recorded events, analysis of spike

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CPT® Codes	Description
	and seizure detection, interpretation, and summary report, complete study; greater than 60 hours, up to 84 hours of EEG recording, without video
95725	Electroencephalogram (EEG), continuous recording, physician or other qualified health care professional review of recorded events, analysis of spike and seizure detection, interpretation, and summary report, complete study; greater than 84 hours of EEG recording, without video

ICD-10-CM Diagnosis Codes that Support Coverage Criteria

ICD-10-CM Code	Description
F44.5	Conversion disorder with seizures or convulsions
G40.001- G40.919	Epilepsy and recurrent seizures
R25.0 – R25.8	Abnormal involuntary movements
R40.4	Transient alteration of awareness
R55	Syncope and collapse
R56.1	Post-traumatic seizures
R56.9	Unspecified convulsions

Reviews, Revisions, and Approvals	Date	Approval Date
Policy developed	09/15	09/15
Converted to new policy template. Removed the following as Not Medically Necessary indications per specialist review: studies of neonates and studies to localize seizure focus in the presence of bilateral foci or rapid generalization. Reviewed by neurologist/sleep medicine specialist.	09/16	09/16
References reviewed and updated.	09/17	09/17
References reviewed and updated.	08/18	08/18
References reviewed and updated with two added. Coding reviewed. Specialty review completed. Reviewed by neurologist. Added last sentence, “Ambulatory EEG monitoring....” to the description. Within criteria, removed “for classification of seizure type” from “B.” and updated “D.” with “To characterize seizure type.....”, also removing “To adjust antiepileptic medication levels”. Removed “F. To identify and medicate absence seizures.” Removed “G. To differentiate between epileptic and sleep disorder related episodes.” Removed paragraph in Background section on psychogenic nonepileptic spells and the paragraph on analysis.	08/19	08/19
Removed CPT codes 95950, 95953-codes deleted 1/1/2020. Added the following 2020 CPT codes: 95700, 95705, 95708, 95717, 95719, 95721, 95723, and 95725. Removed CPT codes from criteria note specifying which CPT codes should precede which ambulatory EEG codes.	04/20	
Annual review completed. References reviewed and updated. Added the following ICD-10 codes: R40.4, R55	06/20	07/20

References

1. Waterhouse E. New horizons in ambulatory electroencephalography. *IEEE Eng Med Biol Mag.* 2003;22(3):74-80
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3. Krumholz A, Wiebe S, Gronseth GS, et al. Evidence-based guideline: management of an unprovoked first seizure in adults. Report of the Guideline Development Subcommittee of the American Academy of Neurology and the American Epilepsy Society. *Neurology.* 2015;84(16):1705–1713.
4. Brigo F. An evidence-based approach to proper diagnostic use of the electroencephalogram for suspected seizures. *Epilepsy Behav.* 2011; 21(3):219-222.
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6. Faulkner HJ, Arima H, Mohamed A. Latency to first interictal epileptiform discharge in epilepsy with outpatient ambulatory EEG. *Clin Neurophysiol.* 2012; 123(9):1732-1735.
7. Hussain N, Gayatri N, Blake A, Downey L, Seri S, Whitehouse WP. Ambulatory electroencephalogram in children: a prospective clinical audit of 100 cases. *J Pediatr Neurosci.* 2013;8(3):188-191.
8. Seneviratne U, Mohamed A, Cook M, D'Souza W. The utility of ambulatory electroencephalography in routine clinical practice: a critical review. *Epilepsy Res.* 2013;105(1-2):1-12.
9. Hirsch SJ, Haider HA, Moeller, J. Video and ambulatory EEG monitoring in the diagnosis of seizures and epilepsy. UpToDate. July 3, 2017. Accessed June 25, 2020.
10. Korff CM. Childhood absence epilepsy. UpToDate. March 27, 2019. Accessed June 25, 2020.
11. Lawley A, Evans S, Manfredonia F, Cavanna AE. The role of outpatient ambulatory electroencephalography in the diagnosis and management of adults with epilepsy or nonepileptic attack disorder: A systematic literature review. *Epilepsy Behav.* 2015 Dec;53:26-30

Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

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The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members. This clinical policy is not intended to recommend treatment for members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

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Note: For Medicaid members, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Note: For Medicare members, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

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