Clinical Policy: Digital EEG Spike Analysis

Reference Number: CP.MP.105
Date of Last Revision: 09/25

Coding Implications
Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description

Electroencephalography (EEG) is a significant component of epilepsy diagnosis, along with a thorough medical history and neurological workup.[1] Most EEGs today are performed on digital machines, which record data and automatically detect spikes that may indicate seizures.[2] For the purpose of this policy, digital EEG spike analysis, also known as 3D dipole localization or dipole source imaging, refers to additional analysis of digitally recorded EEG spikes by a technician and a physician.

Policy/Criteria

I. It is the policy of health plans affiliated with Centene Corporation® that digital electroencephalography (EEG) spike analysis (CPT 95957), including topographic voltage and/or dipole analysis, is **medically necessary** for the pre-surgical evaluation of members/enrollees with intractable epilepsy, in conjunction with video EEG long-term monitoring.

II. It is the policy of health plans affiliated with Centene Corporation that digital EEG spike analysis (CPT 95957) is **not medically necessary** for any other indication.

Background

According to the American Clinical Neurophysiology Society's (ACNS) Guidelines for Long Term Monitoring of Epilepsy, digital electroencephalography (EEG) is the industry standard. Ambulatory EEG, video EEG, and routine EEG all use digital technology and usually incorporate automatic spike detection.[2] However, these types of EEG analyses are not the same as digital EEG spike (3D dipole localization) analysis. Digital analysis of an EEG requires the analysis of an EEG using quantitative analytical techniques such as data selection, quantitative software processing, and dipole source analysis. Digital EEG spike analysis assessment and billing should not be used for cases when the EEG was only recorded on digital equipment. Digital EEG spike analysis assessment is reserved specifically for times when substantial additional digital analysis was medically necessary and was performed, such as 3D dipole localization, and is most commonly used at specialty centers.[8]

It is important to note that the ACNS specifically states that ambulatory EEG is not appropriate for detailed characterization of EEG features as is required in presurgical evaluation but may serve as useful triage function.[2] 3D spike dipole source analysis, or digital EEG spike analysis, has been shown to be concordant with other modes of presurgical evaluation of epilepsy, including a thorough neurological workup with video EEG, magnetic resonance imaging (MRI), and multiple other imaging and neuropsychological tests; electrocorticography; and magnetoencephalography.[4] Studies have demonstrated "that dipole source models can be successfully employed to detect the epileptogenic foci of interictal epileptiform

discharges."[4(p320)] Therefore, digital EEG spike analysis is recommended for the presurgical evaluation of intractable epilepsy patients.[4]

Coding Implications

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Table 1: Procedure codes that support medical necessity criteria when performed in conjunction with any of the following, and with a diagnosis in Table 2: 95718, 95720, 95722, 95724, 95726

CPT®* Codes	Description
95957	Digital analysis of electroencephalogram (EEG) (eg, for epileptic spike analysis)

Table 2: ICD-10-CM diagnosis codes that support medical necessity criteria

ICD-10-CM Code	Description
G40.011	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, with status epilepticus
G40.019	Localization-related (focal) (partial) idiopathic epilepsy and epileptic syndromes with seizures of localized onset, intractable, without status epilepticus
G40.111	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, with status epilepticus
G40.119	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with simple partial seizures, intractable, without status epilepticus
G40.211	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, with status epilepticus
G40.219	Localization-related (focal) (partial) symptomatic epilepsy and epileptic syndromes with complex partial seizures, intractable, without status epilepticus
G40.311	Generalized idiopathic epilepsy and epileptic syndromes, intractable, with status epilepticus
G40.319	Generalized idiopathic epilepsy and epileptic syndromes, intractable, without status epilepticus
G40.411	Other generalized epilepsy and epileptic syndromes, intractable, with status epilepticus
G40.419	Other generalized epilepsy and epileptic syndromes, intractable. without status epilepticus

ICD-10-CM Code	Description
G40.803	Other epilepsy, intractable, with status epilepticus
G40.804	Other epilepsy, intractable, without status epilepticus
G40.813	Lennox-Gastaut syndrome, intractable, with status epilepticus
G40.814	Lennox-Gastaut syndrome, intractable, without status epilepticus
G40.823	Epileptic spasms, intractable, with status epilepticus
G40.824	Epileptic spasms, intractable, without status epilepticus
G40.843	KCNQ2-related epilepsy, intractable, with status epilepticus
G40.844	KCNQ2-related epilepsy, intractable, without status epilepticus
G40.911	Epilepsy, unspecified, intractable, with status epilepticus
G40.919	Epilepsy, unspecified, intractable, without status epilepticus
G40.A11	Absence epileptic syndrome, intractable, with status epilepticus
G40.A19	Absence epileptic syndrome, intractable, without status epilepticus
G40.B11	Juvenile myoclonic epilepsy, intractable, with status epilepticus
G40.B19	Juvenile myoclonic epilepsy, intractable without status epilepticus
G40.C11	Lafora progressive myoclonus epilepsy, intractable, with status epilepticus
G40.C19	Lafora progressive myoclonus epilepsy, intractable, without status epilepticus

Reviews, Revisions, and Approvals	Revision Date	Approval Date
Policy created.	1/16	1/16
Changed "review date" in the header to "date of last revision" and "date" in the revision log header to "revision date." References reviewed, updated, and reformatted. Reviewed by specialist.	10/21	10/21
Annual review. References reviewed and updated.	09/22	09/22
Annual review. Minor rewording in Criteria I. Background updated with no impact on criteria. References reviewed and updated. Reviewed by external specialist.	09/23	09/23
Added new for 2024 ICD-10 codes G40.C11 and G40.C19 to ICD-10 coding table.	01/24	
In the coding description for 95957, added a note that was previously removed in error stating that it is performed in conjunction with any of the CPT codes below it.	05/24	05/24
Annual review. Background updated with no impact on criteria. References reviewed and updated.	09/24	09/24
Annual review. Noted in criteria statements I and II that code in question is 95957. Numbered coding tables. Removed video EEG codes from Table 1 and added them to the label for Table 1, specifying that 95957 is medically necessary when billed in conjunction with a video EEG code and a diagnosis code in table 2. Reworded label for Table 2. Background updated with no clinical significance. Coding reviewed and updated. Added the following codes to Table 2: G40.843, and G40.844. References reviewed and updated. Reviewed by an external specialist.	09/25	09/25

References

1. Moeller J, Haider HA, Hirsch LJ. Electroencephalography (EEG) in the diagnosis of seizures and epilepsy. UpToDate. www.uptodate.com. Published July 22, 2024. Updated April 29, 2025. Accessed August 5, 2025.
2. American Clinical Neurophysiology Society. Guideline twelve: guidelines for long-term monitoring for epilepsy. *J Clin Neurophysiol*. 2008;25(3):170 to 180. doi:10.1097/WNP.0b013e318175d472
3. Park CJ, Seo JH, Kim D, et al. EEG Source Imaging in Partial Epilepsy in Comparison with Presurgical Evaluation and Magnetoencephalography. *J Clin Neurol*. 2015;11(4):319 to 330. doi:10.3988/jcn.2015.11.4.319
4. Bencizky S, Rosenzweig I, Scherq M, et al. Ictal EEG source imaging in presurgical evaluation: High agreement between analysis methods. *Seizure.* 2016;43:1 to 5. doi: 10.1016/j.seizure.2016.09.017
5. Staljanssens W, Strobbe G, Van Holen R, et al. EEG source connectivity to localize the seizure onset zone in patients with drug resistant epilepsy. *Neuroimage Clin*. 2017;16:689 to 698. Published 2017 Sep 14. doi:10.1016/j.nicl.2017.09.011
6. Sharma P, Scherg M, Pinborg LH, et al. Ictal and interictal electric source imaging in pre-surgical evaluation: a prospective study. *Eur J Neurol*. 2018;25(9):1154 to 1160. doi: 10.1111/ene.13676
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8. Local coverage determination: special EEG tests (L34521). Centers for Medicare and Medicaid Services Web site. http://www.cms.hhs.gov/mcd/search.asp. Published October 1, 2015 (revised January 8, 2019). Accessed August 6, 2025.

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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Note: For Medicaid members/enrollees, 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/enrollees, 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.