Name of Policy:
Digital Electroencephalography (DEEG) Analysis

Policy #: 368
Category: Administrative
Latest Review Date: January 2015
Policy Grade: C

Background/Definitions:
As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts have such coverage.

The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:
1. The technology must have final approval from the appropriate government regulatory bodies;
2. The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;
3. The technology must improve the net health outcome;
4. The technology must be as beneficial as any established alternatives;
5. The improvement must be attainable outside the investigational setting.

Medical Necessity means that health care services (e.g., procedures, treatments, supplies, devices, equipment, facilities or drugs) that a physician, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury or disease or its symptoms, and that are:

1. In accordance with generally accepted standards of medical practice; and
2. Clinically appropriate in terms of type, frequency, extent, site and duration and considered effective for the patient’s illness, injury or disease; and
3. Not primarily for the convenience of the patient, physician or other health care provider; and
4. Not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient’s illness, injury or disease.
**Description of Procedure or Service:**
Digital electroencephalography (DEEG) is the paperless acquisition and recording of the electroencephalogram (EEG) via computer-based instrumentation, with waveform storage in a digital format on electronic media, and waveform display on an electronic monitor or other computer output device. **The procedure for an EEG involves placing a series of electrodes, with at least four recording channels, on the patient.** A very low electrical current is sent through the electrodes and the baseline brain energy is recorded on a diagnostic machine. Electrical activity is recorded and analyzed. Patients are then exposed to a variety of external stimuli, including bright or flashing light, noise or certain drugs, or asked to open and close their eyes, or to change breathing patterns. **The electrodes transmit the resulting changes in brain wave patterns. Variations in wave characteristics correlate with neurological conditions and are used to diagnose specific medical conditions.** Virtually all contemporary EEG recordings use digital recording methods, which involves the use of a digital EEG recorder (machine), but still involves visual analysis of the wave forms.

Digital analysis requires the use of quantitative analytical techniques. Ideally, DEEG creates a recording on a digital medium without loss of anything except the paper itself. In practice, there may be some loss of detail especially at the lower sensitivity settings. Digital EEG also allows for simple but extremely useful digital utilities such as post hoc changes in filters, horizontal and vertical display scale and montage reformatting that allow greater flexibility in reading the EEG. **These tools allow for better visual reading of the record than can be achieved with an analog paper record.**

Digital EEG is significantly more comprehensive than just a digital reading of the EEG. **The analysis of the digital data may include data that expands more than 24 hours of continual monitoring. In general, this would entail an extra hour's work by the technician to process the data from the EEG, and an extra 20-30 minutes of physician time to review the technician's work and review the data produced.**

**Policy:**
**Digital electroencephalography analysis meets** Blue Cross and Blue Shield of Alabama’s medical criteria for coverage when **substantial digital analysis** is performed as evidence by documentation in the patient’s medical record that an **extra hour's work by the technician** to process the data from the digital EEG, and an **extra 20-30 minutes of physician time** to review the technician's work and review the data produced was performed.

**Digital electroencephalography analysis does not meet** Blue Cross and Blue Shield of Alabama’s medical criteria for coverage **simply when the EEG was recorded digitally.**
medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

**Key Points:**
Although DEEG has many benefits it should not be considered a panacea. A skilled technologist is still required to obtain a high-quality recording. Furthermore, even a good technologist can have the misfortune of recording EEG activity, such as a seizure, at a sensitivity, filter setting, or montage that hampers accurate interpretation. This problem can easily be overcome using post hoc changes to the DEEG. However, basic concepts of polarity, principles of localization and montage design, and recording parameters still need to be understood for accurate interpretation. Because there are multiple ways of viewing the data with DEEG, the time required to read the record may exceed that for analog recordings.

The recording parameters and conduct of the test are governed by the applicable standards for the American Clinical Neurophysiology Society (ACNS).

Additionally, the ACNS gives specific directions for billing for digital EEG analysis:

“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 is 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 3D 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 20-30 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, e.g. epilepsy surgery programs. Note that the codes for "monitoring for identification and lateralization of cerebral seizure focus" already include epileptic spike analysis.”

**Key Words:**
Digital electroencephalography, DEEG, digital EEG

**Approved by Governing Bodies:**
Not applicable
**Benefit Application:**
Coverage is subject to member’s specific benefits. Group specific policy will supersede this policy when applicable.

ITS: Home Policy provisions apply
FEP contracts: Special benefit consideration may apply. Refer to member’s benefit plan. FEP does not consider investigational if FDA approved and will be reviewed for medical necessity.

**Coding:**
CPT Codes:

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<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tr>
<td>95957</td>
<td>Digital analysis of electroencephalogram (EEG) (e.g., for epileptic spike analysis)</td>
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**References:**

**Policy History:**
Medical Policy Group, July 2009 (3)
Medical Policy Administration Committee, August 2009
Available for comment August 10-September 23, 2009
Medical Policy Group, January 2015 (3): Updates to Description & References; no change in policy statement

This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member’s plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.

This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield’s administration of plan contracts.