Medical Policy
Electrocardiographic Body Surface Mapping

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Policy Number: 289
BCBSA Reference Number: 2.02.23
NCD/LCD: N/A

Related Policies
Contrast-enhanced Computed Tomography Angiography (CTA) for Coronary Artery Evaluation, #620

Policy
Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO BlueSM and Medicare PPO BlueSM Members

Electrocardiographic body surface mapping is considered INVESTIGATIONAL for all indications including but not limited to acute coronary syndrome.

Prior Authorization Information
Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required for outpatient services.
Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.
N/A indicates that this service is primarily performed in an inpatient setting.

<table>
<thead>
<tr>
<th>Outpatient</th>
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<tbody>
<tr>
<td>Commercial Managed Care (HMO and POS)</td>
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<tr>
<td>Commercial PPO and Indemnity</td>
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<tr>
<td>Medicare HMO BlueSM</td>
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<td>Medicare PPO BlueSM</td>
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CPT Codes / HCPCS Codes / ICD Codes
Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.
Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.
The following codes are included below for informational purposes only; this is not an all-inclusive list.

The following CPT codes are considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

CPT Codes

<table>
<thead>
<tr>
<th>CPT codes:</th>
<th>Code Description</th>
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<tbody>
<tr>
<td>0178T</td>
<td>Electrocardiogram, 64 leads or greater, with graphic presentation and analysis; with interpretation and report</td>
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<tr>
<td>0179T</td>
<td>Electrocardiogram, 64 leads or greater, with graphic presentation and analysis; tracing and graphics only, without interpretation and report</td>
</tr>
<tr>
<td>0180T</td>
<td>Electrocardiogram, 64 leads or greater, with graphic presentation and analysis; interpretation and report only</td>
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Description

Electrocardiographic (ECG) body surface mapping (BSM) consists of an 80-lead disposable electrode array in the form of a vest and includes a conducting gel that is applied to the patient’s chest and back. The vest can be affixed to the patient in less than 5 minutes. This system displays clinical data in 3 forms: a colorimetric 3-D torso image, an 80-lead single beat view, and the 12-lead ECG. The colorimetric torso images are said to allow the practitioner to rapidly scan the heart for significant abnormalities.

Currently, in patients presenting to the emergency department with symptoms suggestive of myocardial ischemia, a standard 12-lead ECG is obtained. In the presence of ST segment elevation on the ECG, personnel are activated to respond in a timely manner to open a presumed coronary artery occlusion, either by mechanical means through balloon angioplasty, or medically, through intravenous thrombolytic drugs. The 12-lead ECG has a specificity of 94%, leading to relatively few erroneous interventions.

However, the sensitivity is approximately 50%. These patients may be further stratified by scoring systems and time-sensitive cardiac enzymes, which may require up to 24 hours of monitored observation. BSM is being considered as a method to assist in the rapid identification of patients who would benefit from earlier coronary artery intervention than is achieved utilizing current standard of care. The negative predictive value of the test, which has the potential to identify patients who do not require further evaluation with serial cardiac enzymes and clinical observation, is not currently receiving attention as a research topic.

Summary

Electrocardiographic (ECG) body surface mapping (BSM) is an electrocardiographic technique that uses multiple (generally ≥80) electrocardiography leads to detect cardiac electrical activity. The use of multiple leads may result in improved diagnostic accuracy of acute myocardial infarction (AMI) or acute coronary syndrome (ACS), compared with that of the standard 12-lead ECG. No BSM ECG devices with 80 or more leads are currently commercially available in the United States.

The evidence for use of ECG BSM in patients with suspected or confirmed cardiac disorders includes a number of studies on the association between ECG BSM and AMI. Relevant outcomes are overall survival, disease-specific survival, test performance, and morbid events. No prospective trials using BSM to guide treatment have been conducted. Results of published studies have been variable and an Agency for Healthcare Research and Quality review did not find statistically significant differences in the diagnostic accuracy of BSM and 12-lead ECG. Under ideal conditions, it is possible that BSM has a higher sensitivity than 12-lead ECG alone for acute coronary events. However, the data also suggest that the specificity may be lower, highlighting concerns regarding false-positive results. In clinical practice, patients with symptoms suspicious for ischemia are not diagnosed with 12-lead ECG alone but in combination with clinical presentation and serial cardiac enzymes. There is no evidence demonstrating
that electrocardiographic BSM leads to changes in management that improve health outcomes. The evidence is insufficient to determine the effect of the technology on health outcomes.

### Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
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<tbody>
<tr>
<td>12/2013</td>
<td>New references from BCBSA National medical policy.</td>
</tr>
<tr>
<td>11/2011</td>
<td>Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.</td>
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### Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

- Medical Policy Terms of Use
- Managed Care Guidelines
- Indemnity/PPO Guidelines
- Clinical Exception Process
- Medical Technology Assessment Guidelines

### References


12. Daly MJ, Adgey JA, Harbinson MT. Improved detection of acute myocardial infarction in patients with chest pain and significant left main stem coronary stenosis. QJM. Feb 2012;105(2):127-135. PMID 21890878


