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Original Effective Date: 11/15/00

Reviewed: 03/27/25

Revised: 04/15/25

Subject: Signal Averaged Electrocardiography (SAECG)

THIS MEDICAL COVERAGE GUIDELINE IS NOT AN AUTHORIZATION, CERTIFICATION, EXPLANATION OF BENEFITS, OR A GUARANTEE OF PAYMENT, NOR DOES IT SUBSTITUTE FOR OR CONSTITUTE MEDICAL ADVICE. ALL MEDICAL DECISIONS ARE SOLELY THE RESPONSIBILITY OF THE PATIENT AND PHYSICIAN. BENEFITS ARE DETERMINED BY THE GROUP CONTRACT, MEMBER BENEFIT BOOKLET, AND/OR INDIVIDUAL SUBSCRIBER CERTIFICATE IN EFFECT AT THE TIME SERVICES WERE RENDERED. THIS MEDICAL COVERAGE GUIDELINE APPLIES TO ALL LINES OF BUSINESS UNLESS OTHERWISE NOTED IN THE PROGRAM EXCEPTIONS SECTION.

Position Statement	Billing/Coding	Reimbursement	Program Exceptions	Definitions	Related Guidelines
Other	References	Updates			

DESCRIPTION:

Signal-averaged electrocardiography (SAECG) is a technique involving computerized analysis of small segments of a standard EKG to detect ventricular late potentials. Late potentials are signals that can be seen only at a very low voltage and are usually masked by noise from electrical equipment.

SAECG has been proposed as a test to predict which patients are at higher risk of experiencing an arrhythmic event (either a sustained arrhythmia or sudden cardiac death). Since sudden cardiac death, whether from arrhythmias or pump failure, is one of the most common causes of death after a previous MI, there is much interest in risk stratification to determine target therapy.

Summary and Analysis of Evidence: An UpToDate review on “Incidence of and risk stratification for sudden cardiac death after myocardial infarction” (Podrid, 2024) states, “.the predictive value of SAECG alone is low, and in practice this test is now rarely used for risk stratification.” The review goes on to state, “A number of additional risk factors are associated with the risk of SCD after an acute MI, including microvolt T wave alternans, signal-averaged ECG, and heart rate variability. However, because the results of these studies do not usually affect management decisions, we do not recommend their routine use.” Sugawara and associates (2023) concluded that “Although its evidence has not been well established, our case may indicate that the SA-ECG could be a potentially useful tool to evaluate the effectiveness of a therapy after ventricle arrhythmia ablation in patients harboring LPs and confined abnormal myocardium. In order to establish more solid evidence, a larger population and unified validation are necessary.” Signal-averaged ECG has been studied as a diagnostic test for several cardiac related disorders but the evidence is insufficient to demonstrate clinical utility and to determine the effects of the technology on health outcomes.

POSITION STATEMENT:

Signal-averaged electrocardiography (SAECG) is considered **experimental or investigational** for all indications. The evidence is insufficient to determine the effects of the technology on health outcomes.

BILLING/CODING INFORMATION:

CPT Coding:

93278	Signal-averaged electrocardiography (SAECG), with or without ECG (Investigational)
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REIMBURSEMENT INFORMATION:

Refer to section entitled [POSITION STATEMENT](#).

PROGRAM EXCEPTIONS:

Federal Employee Program (FEP): Follow FEP guidelines.

State Account Organization (SAO): Follow SAO guidelines.

Medicare Advantage products: No National Coverage Determination (NCD) and/or Local Coverage Determination (LCD) were found at the time of the last guideline reviewed date.

If this Medical Coverage Guideline contains a step therapy requirement, in compliance with Florida law 627.42393, members or providers may request a step therapy protocol exemption to this requirement if based on medical necessity. The process for requesting a protocol exemption can be found at [Coverage Protocol Exemption Request](#).

DEFINITIONS:

None applicable

RELATED GUIDELINES:

None applicable

OTHER:

None applicable.

REFERENCES:

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2. Al-Khatib SM, Stevenson WG, et al. 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: Executive summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. Heart Rhythm. 2018 Oct;15(10):e190-e252.

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6. Banks L, Al-Mousay S, et al. Cardiac remodeling in middle-aged endurance athletes: relation between signal-averaged electrocardiogram and LV mass. *Am J Physiol Heart Circ Physiol.* 2021 Jan 1;320(1):H316-H322.PMID:33124882.
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13. Gatzoulis KA, Arsenos P, et al. Signal-averaged electrocardiography: Past, present, and future. *J Arrhythm.* 2018 May 28;34(3):222-229.
14. Gatzoulis KA, Sideris A, Kanoupakis E, et al. Arrhythmic risk stratification in heart failure: Time for the next step? *Ann Noninvasive Electrocardiol.* 2017 Mar;22(2). PMID: 28252256.
15. Goldberger JJ, Cain ME, Hohnloser SH, et al, American Heart Association/American College of Cardiology Foundation/Heart Rhythm Society Scientific Statement on Noninvasive Risk Stratification Techniques for Identifying Patients at Risk for Sudden Cardiac Death, *J Am Coll Cardiol* 2008; 52:1179-99.
16. Hunt SA, Abraham WT, Chin MH, et al. ACC/AHA 2005 Guideline Update for the Diagnosis and Management of Chronic Heart Failure in the Adult: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure):developed in collaboration with the American College of Chest Physicians and the International Society for Heart and Lung Transplantation: endorsed by the Heart Rhythm Society. *Circulation.* 2005 Sep 20; 112(12): e154-235.

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COMMITTEE APPROVAL:

This Medical Coverage Guideline (MCG) was approved by the Florida Blue Medical Policy and Coverage Committee on 03/27/25.

GUIDELINE UPDATE INFORMATION:

11/15/00	Medical Coverage Guideline Developed.
02/15/02	Medical Coverage Guideline Reformatted.
03/15/03	Reviewed; no changes.
09/15/06	Scheduled review and revision of guideline consisting of updated references and addition of rationale for investigational statement.
07/15/07	Annual review, investigational status maintained, reformatted guideline, references updated.
09/15/08	Scheduled review; no change in position statement; references updated.
06/15/09	Annual review: position statement maintained; references updated.
05/11/14	Revision: Program Exceptions section updated.

07/15/17	Revision; investigatioinal status maintained, description, position statement, and references updated.
05/15/19	Review; Position statement maintained; description section and references updated.
05/15/21	Review; Position statement maintained; references updated.
06/15/23	Review: Position statement maintained and references updated.
05/15/24	Review: Position statement maintained; description and references updated.
04/15/25	Review: Position statement maintained and references updated.