MEDICAL POLICY

Capital BLUE

POLICY TITLE	T-WAVE ALTERNANS TESTING
POLICY NUMBER	MP- 2.057

Original Issue Date (Created):	August 23, 2002
Most Recent Review Date (Revised):	September 24, 2013
Effective Date:	November 1, 2013

I. POLICY

T-wave alternans is considered **investigational** as a technique of risk stratification for primary or secondary prevention* of fatal arrhythmias and sudden cardiac death in patients with a history of myocardial infarction, congestive heart failure, cardiomyopathy or other cardiac disorders such as long-QT syndrome (e.g., Brugada syndrome).
There is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

*Primary prevention refers to patients that have *not* experienced a life-threatening arrhythmia. Secondary prevention refers to patients that have experienced a life-threatening arrhythmia.

Cross-references
MP-1.081 Cardioverter-Defibrillators (Implantable and External)
MP-2.233 Genetic Testing for Congenital Long QT Syndrome

II. PRODUCT VARIATIONS

[N] = No product variation, policy applies as stated
[Y] = Standard product coverage varies from application of this policy, see below

[N] Capital Cares 4 Kids
[N] PPO
[N] HMO
[Y] SeniorBlue HMO**
[Y] SeniorBlue PPO**
[N] Indemnity
[N] SpecialCare
[N] POS
[Y] FEP PPO*

* Refer to FEP Medical Policy Manual MP-2.02.13 T-Wave Alternans. The FEP Medical Policy manual can be found at:
http://bluewebportal.bcbs.com/landingpagelevel3/504100?docId=23980

** Refer to Centers for Medicare and Medicaid (CMS) National Coverage Determination (NCD) 20.30 for coverage on T-Wave Alternans. Microvolt T-wave Alternans (MTWA) diagnostic testing is covered for the evaluation of patients at risk of sudden cardiac death, only when the spectral analytic method is used.

III. DESCRIPTION/BACKGROUND

Microvolt T-wave alternans (MTWA) refers to a beat-to-beat variability in the T-wave amplitude. Because a routine electrocardiogram (EKG) cannot detect these small fluctuations, this test requires specialized sensors to detect the fluctuations and computer algorithms to evaluate the results. T-wave alternans is a provocative test that requires gradual elevation of the heart rate to above 110 beats per minute. The test can be performed in conjunction with an exercise tolerance stress test. Test results are reported as the number of standard deviations by which the peak signal of the T-wave exceeds the background noise. This number is referred to as the "alternans ratio." An alternans ratio of 3 or greater is typically considered a positive result, an absent alternans ratio is considered a negative result, and anything in between is considered indeterminate.

The presence of T-wave alternans has been investigated as a risk factor for fatal arrhythmias and sudden cardiac death in patients with a history of myocardial infarction, congestive heart failure, or cardiomyopathy. High-risk patients may be treated with drugs to suppress the emergence of arrhythmias or undergo implantation of cardiac defibrillators to terminate tachyarrhythmias when they occur. Since sudden cardiac death is one of the most common causes of death after a myocardial infarction (MI) or in patients with dilated cardiomyopathy, there is intense interest in risk stratification to target therapy.

Patient groups are categorized into those who have not experienced a life-threatening arrhythmia (i.e., primary prevention) and those who have (i.e., secondary prevention). Those who have already experienced an arrhythmia are already at high risk and probably do not require testing. T-wave alternans is one of many risk factors that have been investigated for identifying candidates for primary prevention. Others include left ventricular ejection fraction, arrhythmias detected on Holter monitor or electrophysiologic studies, heart rate variability, and baroreceptor sensitivity. Signal-averaged electrocardiography (SAECG) is another technique for risk stratification. SAECG measures beat-averaged conduction, while T-wave alternans measures beat-to-beat variability.

T-wave alternans has also been investigated as a diagnostic test for patients with syncope of unknown origin and as a noninvasive test to identify candidates for further invasive electrophysiology testing of the heart.

IV. DEFINITIONS

ARRHYTHMIA is an irregularity or loss of rhythm, especially of the heart**.**

CARDIOMYOPATHY refers to a disease of the myocardium (heart muscle) causing enlargement.

DEFIBRILLATOR is an electrical device that produces defibrillation of the heart. It may be used externally or in the form of an automatic implanted cardioverter defibrillator.

MYOCARDIAL INFARCTION refers to the loss of living heart muscle as a result of coronary artery occlusion.

PRIMARY PREVENTION refers to patients that have *not* experienced a life-threatening arrhythmia. Secondary prevention refers to patients that have experienced a life-threatening arrhythmia.

SECONDARY PREVENTION refers to patients that have experienced a life-threatening arrhythmia.

T WAVE is the portion of the electrical activity of the heart that reflects repolarization of the ventricles.

V. BENEFIT VARIATIONS

The existence of this medical policy does not mean that this service is a covered benefit under the member's contract. Benefit determinations should be based in all cases on the applicable contract language. Medical policies do not constitute a description of benefits. A member's individual or group customer benefits govern which services are covered, which are excluded, and which are subject to benefit limits and which require preauthorization. Members and providers should consult the member's benefit information or contact Capital for benefit information.

VI. DISCLAIMER

Capital's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. Capital considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.

VII. REFERENCES

2007 TEC Assessments: Microvolt T-wave alternans testing to risk stratify patients being considered for ICD therapy for primary prevention of sudden death.

Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). Testing to Risk-Stratify Patients Being Considered for ICD Therapy for Primary Prevention of Sudden Death. TEC Assessments 2006; Volume 21, Tab 14.

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cardiomyopathy patients: a meta-analysis. Ann Noninvasive Electrocardiol 2011; 16(4):388-402.

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Verrier RL, Klingenheben T, Malik M et al. Microvolt T-wave alternans physiological basis, methods of measurement, and clinical utility--consensus guideline by International Society for Holter and Noninvasive Electrocardiology. J Am Coll Cardiol 2011; 58(13):1309-24.

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VIII. CODING INFORMATION

Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Investigational; therefore not covered:

CPT Codes ®							
93025							

*Please see Medicare LCD or NCD for additional covered procedures and diagnoses.

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IX. POLICY HISTORY

MP 2.057	CAC 6/24/03
	CAC 9/13/05
	CAC 4/25/06
	CAC 4/24/07 Consensus
	CAC 5/27/08 Consensus
	CAC 3/31/2010 BCBSA Project
	CAC 4/26/11 Consensus
	CAC 6/26/12 Consensus, policy statements unchanged, references updated. Changed FEP variation to reference to FEP Medical Policy Manual MP-2.02.13 T-Wave Alternans.
	7/29/13 Admin coding review complete--rsb
	CAC 9/24/13 consensus review. No change to policy statements, references reviewed.