

The CPT codes in this policy were terminated in AMA CPT 2012. DMA will develop a policy for the replacement codes.

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1.0 Description of the Procedure, Product, or Service

Ambulatory Holter electrocardiography (EKG) is a widely used noninvasive test in which EKG is continuously recorded over an extended period of time, typically 24 to 48 hours, to evaluate symptoms suggestive of cardiac arrhythmias, i.e., palpitations, dizziness, or syncope. However, Holter monitoring will be ineffective if a recipient experiences infrequent symptoms. Ambulatory event monitors (AEMs) were developed to provide longer periods of monitoring. In this technique, the recording device is either worn continuously and activated only when the recipient experiences symptoms, or carried by the recipient and applied and activated when symptoms are present. The recorded EKGs are then stored for future analysis or transmitted by telephone to a receiving station, e.g., a doctor's office, hospital, or cardiac monitoring service, where the EKGs can then be analyzed. AEMs can be used for extended periods of time, typically up to a month until the recipient experiences symptoms. Since the EKGs are recorded only during symptoms, there is good correlation with any underlying arrhythmia. Conversely, if no EKG abnormality is noted, a noncardiac etiology of the recipient's symptoms can be sought.

1.1 Types of Ambulatory Event Monitors available

- a. Noncontinuous devices with memory: These devices are carried by the recipient and applied to the precordial area via nongel electrodes when the symptoms are occurring or, alternatively, a recording device may be worn on the wrist and then activated when symptoms are present. The limitation of these devices is that an arrhythmia of very short duration would be difficult to record. In addition, noncontinuous devices require reasonable dexterity on the part of the recipient to apply the device correctly during a symptomatic period. This is a particular limitation if the recipient is incapacitated during symptomatic periods.
- b. Continuous "memory loop" devices: These sophisticated devices are able to continuously store a single channel of EKG data in a refreshed memory. If the recipient activates the device, the EKG is then recorded from the memory loop for the preceding 30 to 90 seconds, and for the next minute or so. Therefore, these types of devices permit recording of the onset of arrhythmias and/or transient or incapacitating events. They obviously must be worn continuously.
- c. Implantable continuous "memory loop" devices: An implantable loop recorder device is inserted just under the recipient's skin in the chest area during an outpatient surgical procedure. When symptoms are felt, the recipient places a hand-held activator over the recorder to activate the storage of cardiac rhythms. This device can be used for more than one year. The Reveal® Insertable Loop Recorder is an implantable memory loop device recently approved by the U.S. Food and Drug Administration (FDA).
- d. Auto-triggered devices: All of these devices require activation by the recipient. More recently, auto-triggering technology has become available, which can be adapted to memory loop devices. For example, event monitors can be programmed to detect heart rates greater than 165 beats per minute, less than 40 beats per minute, or an asystole of greater than 3 seconds.

- e. Mobile Cardiac Outpatient Telemetry (MCOT): Ambulatory event monitors store the recorded data, which are ultimately transmitted either to a physician's office or to a central recording station. In contrast, outpatient cardiac telemetry provides real-time monitoring and analysis. For example, CardioNet Inc. is a company that offers mobile cardiac outpatient telemetry. In this system, the recipient wears a 3-lead sensor, which constantly communicates with the CardioNet monitor, a lightweight unit that can be carried in a pocket or purse. When an arrhythmia is detected according to preset parameters, the EKG is automatically transmitted to a central CardioNet service center, where the EKG is immediately interpreted, with results sent to the referring physician. The referring physician can request the level and timing of response, ranging from daily reports to stat results. Other systems for outpatient cardiac telemetry include the HEARTLink II system (Cardiac Telecom Corp.), the VST (Vital Signs Transmitter, Biowatch Medical), and the Lifestar ambulatory cardiac telemetry (ACT) system (Card Guard Scientific Survival Ltd). The CardioNet system has a built-in cellular telephone that automatically transmits signals when the recipient is away from home.

1.2 Other related information

Ambulatory event monitors are a well-established technology that are most typically used to evaluate episodes of cardiac symptoms (palpitations, dizziness, syncope), which, due to their infrequency, would escape detection on a standard 24- to 48-hour Holter monitor. Other proposed uses include monitoring the efficacy of antiarrhythmic therapy and evaluating ST segment changes as an indication of myocardial ischemia. However, evidence is inadequate to validate these uses of AEMs. Although serial EKG monitoring has often been used to guide antiarrhythmic therapy in recipients with symptomatic sustained ventricular arrhythmias or survivors of near sudden cardiac death, it is not known what level of reduction of arrhythmic events constitute successful drug therapy. Furthermore, the recipient's cardiac activity must be evaluated before and during treatment, such that the recipient can serve as his or her own control. The routine monitoring of asymptomatic recipients after myocardial infarction is additionally controversial, especially after the Cardiac Arrhythmia Suppression Trial (CAST) showed that recipients treated with encainide or flecainide actually had a higher mortality. While Holter monitoring has been used to detect ST changes, it is unclear whether ST segment changes can be reliably detected by an AEM. The interpretation of ST segment change is limited by instability of the isoelectric line, which is in turn dependent on meticulous attention to skin preparation, electrode attachment, and measure to reduce cable movement.

Autotrigger loop recorders have become a part of the standard diagnostic approach to recipients who have infrequent symptoms that are thought likely to be due to arrhythmias. Therefore, this is the test to which newer technologies must be compared. An increasing number of studies have indicated that MCOT does record cardiac electric signals, without recipient activation, for subsequent analysis. Given the current evidence, this technology thus appears to be another approach to long-term cardiac monitoring. However, none of the studies have clearly shown an improvement in net health outcome as a result of using MCOT. There are limited data that show any potential value for the continuous monitoring aspects of MCOT. Thus, in those situations where MCOT is more expensive than alternate devices such as the auto-trigger device, it would be considered not medically necessary.

2.0 Eligible Recipients

2.1 General Provisions

To be eligible, NCHC recipients must be enrolled on the date of service.

3.0 When the Procedure, Product, or Service Is Covered

3.1 General Criteria

NCHC covers procedures, products, and services related to this policy when they are medically necessary and

- a. the procedure, product, or service is individualized, specific, and consistent with symptoms or confirmed diagnosis of the illness or injury under treatment, and not in excess of the recipient's needs;
- b. the procedure, product, or service can be safely furnished, and no equally effective and more conservative or less costly treatment is available; **AND**
- c. the procedure, product, or service is furnished in a manner not primarily intended for the convenience of the recipient, the recipient's caretaker, or the provider.

3.2 Specific Criteria

- a. External ambulatory event monitors.

The use of recipient-activated or auto-activated external ambulatory event monitors may be considered medically necessary as a diagnostic alternative to Holter monitoring in recipients who experience infrequent symptoms (less frequently than every 48 hours) suggestive of cardiac arrhythmias (i.e., palpitations, dizziness, presyncope, or syncope).

- b. Implantable ambulatory event monitors.

The use of implantable ambulatory event monitors, either recipient activated or auto-activated, may be considered medically necessary only in the small subset of recipients who experience recurrent symptoms so infrequently that a prior trial of Holter monitor and other external ambulatory event monitors has been unsuccessful.

4.0 When the Procedure, Product, or Service Is Not Covered

4.1 General Criteria

Procedures, products, and services related to this policy are not covered when

- a. the recipient does not meet the eligibility requirements listed in **Section 2.0**;
- b. the recipient does not meet the medical necessity criteria listed in **Section 3.0**;
- c. the procedure, product, or service unnecessarily duplicates another provider's procedure, product, or service; or
- d. the procedure, product, or service is experimental or investigational.

4.2 Specific Criteria

- a. Outpatient cardiac telemetry (also known as mobile cardiac outpatient telemetry or MCOT) is considered not medically necessary as a diagnostic alternative in recipients who experience infrequent symptoms (less frequently than every 48 hours) suggestive of cardiac arrhythmias (i.e., palpitations, dizziness, presyncope, or syncope).
- b. Other uses of ambulatory event monitors, including outpatient cardiac telemetry, are considered investigational, including monitoring effectiveness of antiarrhythmic therapy and detection of myocardial ischemia by detecting ST segment changes.

5.0 Requirements for and Limitations on Coverage

5.1 Prior Approval

Prior approval is not required for ambulatory event monitors.

6.0 Providers Eligible to Bill for the Procedure, Product, or Service

To be eligible to bill for procedures, products, and services related to this policy, providers shall

- a. meet NCHC qualifications for participation;
- b. be currently enrolled with NCHC; **AND**
- c. bill only for procedures, products, and services that are within the scope of their clinical practice, as defined by the appropriate licensing entity.

Note: Interpretation of lab or radiology services by providers who are non-licensed in the State of North Carolina is not covered.

7.0 Additional Requirements

7.1 Compliance

Providers must comply with all applicable federal, state, and local laws and regulations, including the Health Insurance Portability and Accountability Act (HIPAA) and record retention requirements.

8.0 Policy Implementation/Revision Information

Original Effective Date: July 1, 2010

Revision Information:

Date	Section Revised	Change
July 1, 2010	Throughout	Policy Conversion: Implementation of Session Law 2009-451, Section 10.32 "NC HEALTH CHOICE/PROCEDURES FOR CHANGING MEDICAL POLICY."
February 29, 2012	Throughout	Policy Termination

Date of Termination: 02.29.2012

Attachment A: Claims-Related Information

Reimbursement requires compliance with all NCHC guidelines.

A. Claim Type

Professional (CMS-1500/837P transaction)

Institutional (UB-04/837I transaction)

B. Diagnosis Codes

Providers must bill the ICD-9-CM diagnosis codes(s) to the highest level of specificity that supports medical necessity.

C. Procedure Code(s)

CPT Codes				
93224	93225	93226	93227	93228
93229	93230	93231	93232	93233
93235	93236	93237	93268	93270
93271	93272	33282	33284	

HCPCS Code
E0616

D. Modifiers

Providers are required to follow applicable modifier guidelines.

E. Billing Units

The appropriate procedure code(s) used determines the billing unit(s).

F. Place of Service

Outpatient Hospital and Office

G. Co-payments

Co-payment(s) may apply to covered prescription drugs and services.

H. Reimbursement

Providers must bill their usual and customary charges.