Clinical Policy: Holter Monitors

Reference Number: LA.CP.MP.113 Coding Implications
Date of Last Revision: 5/23 Revision Log

See Important Reminder at the end of this policy for important regulatory and legal information.

Description
This policy provides medical necessity guidelines for Holter monitoring up to 48 hours. For Holter monitoring beyond 48 hours, see clinical decision support criteria.

Ambulatory electrocardiogram (ECG) monitoring provides a view of cardiac activity over an extended period of time and can be performed using various techniques. The method selected to conduct ambulatory ECG monitoring depends on the desired outcome and the frequency and duration of symptoms. Continuous Holter monitoring for 24 to 48 hours is the most practical initial approach for those with daily or near daily unexplained symptoms, as well as for assessing the efficacy of medication and other treatments for cardiac arrhythmias.[5]

Policy/Criteria

I. It is the policy of Louisiana Healthcare Connections that Holter monitoring is **medically necessary** for members/enrollees > 18 years old who require 24 to 48 hours of cardiac activity monitoring with any of the following symptoms or indications:
- A. Evaluation of any of these unexplained indications: syncope, near-syncope, episodic dizziness, recurrent palpitations, episodic shortness of breath or chest pain;
- B. Evaluation of neurological events when transient atrial fibrillation or flutter is suspected;
- C. Evaluation of syncope, near-syncope, episodic dizziness, or palpitations in whom a probable cause other than an arrhythmia has been identified but in whom symptoms persist despite treatment of this other cause;
- D. Evaluation of members/enrollees with cardiomyopathy, or a first-degree relative with arrhythmogenic right ventricular cardiomyopathy;
- E. Evaluation of possible or documented prolonged QT syndromes;
- F. To screen for asymptomatic arrhythmia in a members/enrollees with Brugada syndrome;
- G. Assessment of efficacy of medication for arrhythmia treatment when baseline arrhythmia frequency is reproducible and of sufficient frequency to permit analysis;
- H. Detection of proarrhythmic responses to antiarrhythmic therapy in members/enrollees at high risk;
- I. Assessment of the function of pacemakers or implantable cardioverter defibrillators (ICD) with frequent palpitations, syncope, or near-syncope, and to assist in programming of enhanced features;
- J. Evaluation of suspected pacemaker or ICD component failure or malfunction when device interrogation is inconclusive;
- K. Assessment of efficacy of adjunctive medications in members/enrollees receiving frequent ICD therapy;
- L. Assessment of suspected variant angina;
- M. Evaluation of recurrent chronic heart failure when arrhythmia is suspected;
- N. Evaluation of possible arrhythmias post ablation procedures.

II. It is the policy of Louisiana Healthcare Connections that Holter monitoring is **medically necessary** for pediatric members/enrollees ≤ 18 years old who require 24 to 48 hours of cardiac activity monitoring with any of the following symptoms or indications:

A. Evaluation of syncope, near-syncope, or dizziness in members/enrollees with identified cardiac disease, previously documented arrhythmia, or pacemaker dependency;
B. Evaluation of syncope or near-syncope associated with exertion when cause is not established;
C. Evaluation of unexplained syncope, near-syncope, or sustained palpitation when there is no overt clinical evidence of heart disease;
D. Assessment of efficacy of medications for arrhythmia following initiation of treatment or during rapid somatic growth;
E. Evaluation of patients with cardiomyopathy, or a first-degree relative with arrhythmogenic right ventricular cardiomyopathy;
F. Evaluation of possible or documented prolonged QT syndromes;
G. Evaluation of palpitation in a member/enrollee with prior surgery for congenital heart disease and significant residual hemodynamic abnormalities;
H. Evaluation of asymptomatic congenital complete atrioventricular (AV) block, non-paced;
I. Evaluation of cardiac rhythm after transient AV block associated with heart surgery or catheter ablation;
J. Evaluation of rate-responsive or physiological pacing function in symptomatic members/enrollees.

III. It is the policy of Louisiana Healthcare Connections that Holter monitoring for any other indication not included in this policy is **not medically necessary** because efficacy has not been established.

Background

The most common use of ambulatory electrocardiogram (ECG) monitoring is the evaluation and diagnosis of cardiac arrhythmias or conduction abnormalities. The device continuously monitors the heart's electrical activity for a period of 24 to 48 hours. The member/enrollee has a self-activated event marker which identifies when they are experiencing symptoms such as palpitations, syncope/near-syncope, dizziness, shortness of breath, chest pain, or episodic fatigue. This is especially helpful in members/enrollees who experience symptoms too infrequent to be caught on a standard ECG.[5]

The recorded data are analyzed with the event markers to determine if the symptoms are related to an arrhythmia. There are four outcomes this analysis could provide. Useful findings include the simultaneous documentation of a cardiac arrhythmia capable of producing the noted symptoms, which can lead to directed therapy for the arrhythmia; and symptoms that occur without arrhythmia, demonstrating symptoms are not related to an arrhythmia. Of equivocal value, the findings may show that a cardiac arrhythmia is present but no symptoms were present during the recording, indicating the arrhythmia may or may not be related to the symptoms. Lastly, if there were no symptoms during the recording and there were no arrhythmias identified, the recording is not useful.[5]

Ambulatory ECG is also helpful in assessing the efficacy of antiarrhythmic therapy. It is noninvasive, provides quantitative data, and permits correlation of symptoms with ECG phenomena. It does have some limitations in regard to its use as a therapeutic guide, which should be taken into consideration. Additionally, ambulatory ECG monitoring is useful in assessing pacemakers and ICDs, as it can evaluate symptoms of palpitations, syncope, or near-syncope to assess device function; assist in the programing of enhanced features; evaluate suspected component failure or a malfunctioning device; and assess concomitant pharmacological therapy for members/enrollees receiving frequent ICD therapy.[5,8]

Due to the advancement of technological capabilities in ambulatory ECG assessment, it can provide accurate and clinically meaningful information about myocardial ischemia in patients with coronary disease. The most commonly encountered ambulatory ECG sign of ischemia is ST-segment depression and, while this is an important finding, it is important to note that ST-segment changes and other repolarization abnormalities can occur for reasons other than ischemia. These conditions must be considered when evaluating the predictive value of ST-segment changes in each specific member/enrollee. Furthermore, ambulatory ECG can be beneficial in members/enrollees suspected of having variant angina. Periods of ST-segment elevation indicative of transmural ischemia can be identified in those with variant angina or high-grade proximal stenosis.[5,6]

In the pediatric population, ambulatory ECG can be used for the same indications as for adults, in addition to a number of pediatric-specific concerns. Monitoring in children with heart disease, with or without symptoms, is used to observe the evolution of disease processes, identify medication dose changes required due to growth, and identify the progressive onset of late arrhythmias after surgery for congenital heart defects.[6,10] Likewise, this monitoring is beneficial in pediatric members/enrollees with hypertrophic or dilated cardiomyopathies or known or suspected prolonged QT syndromes.[9] Ambulatory ECG can also be used to evaluate asymptomatic pediatric members/enrollees with congenital complete AV block in order to identify those at increased risk for sudden arrhythmic events who may benefit from prophylactic pacemaker implantation.[5,6,10]

Coding Implications

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CPT® Codes	Description
93224	External electrocardiographic recording up to 48 hours by continuous rhythm recording and storage; includes recording, scanning analysis with report, review and interpretation by a physician or other qualified health care professional
93225	External electrocardiographic recording up to 48 hours by continuous rhythm recording and storage; recording (includes connection, recording, and disconnection)
93226	External electrocardiographic recording up to 48 hours by continuous rhythm recording and storage; scanning analysis with report
93227	External electrocardiographic recording up to 48 hours by continuous rhythm recording and storage; review and interpretation by a physician or other qualified health care professional

ICD-10-CM Diagnosis Codes that Support Coverage Criteria

ICD-10-CM Code	Description
G45.9	Transient cerebral ischemic attack, unspecified
G71.00 through G71.09	Muscular dystrophy
G99.0	Autonomic neuropathy in diseases classified elsewhere
I20.0 through I20.9	Angina pectoris
I24.0 through I24.9	Other acute ischemic heart diseases
I25.10	Atherosclerotic heart disease of native coronary artery without angina pectoris
I25.112	Atherosclerosic heart disease of native coronary artery with refractory angina pectoris
I25.702	Atherosclerosis of coronary artery bypass graft(s), unspecified, with refractory angina pectoris
I25.712	Atherosclerosis of autologous vein coronary artery bypass graft(s) with refractory angina pectoris
I25.722	Atherosclerosis of autologous artery coronary artery bypass graft(s) with refractory angina pectoris
I25.732	Atherosclerosis of nonautologous biological coronary artery bypass graft(s) with refractory angina pectoris
I25.752	Atherosclerosis of native coronary artery of transplanted heart with refractory angina pectoris
I25.762	Atherosclerosis of bypass graft of coronary artery of transplanted heart with refractory angina pectoris
I25.792	Atherosclerosis of other coronary artery bypass graft(s) with refractory angina pectoris
I34.0 through I34.9	Nonrheumatic mitral valve disorders

ICD-10-CM Code	Description
I35.0 through I35.9	Nonrheumatic aortic valve disorders
I36.0 through I36.9	Nonrheumatic tricuspid valve disorders
I37.0 through I37.9	Nonrheumatic pulmonary valve disorders
I42.0	Dilated cardiomyopathy
I42.1	Obstructive hypertrophic cardiomyopathy
I42.2	Other hypertrophic cardiomyopathy
I42.3	Endomyocardial (eosinophilic) disease
I42.4	Endocardial fibroelastosis
I42.5	Other restrictive cardiomyopathy
I42.6	Alcoholic cardiomyopathy
I42.7	Cardiomyopathy due to drug and external agent
I42.8	Other cardiomyopathies
I42.9	Cardiomyopathy, unspecified
I44.0 through I44.7	Atrioventricular and left bundle-branch block
I45.0 through I45.9	Other conduction disorders
I46.2 through I46.9	Cardiac arrest
I47.0 through I47.9	Paroxysmal tachycardia
I48.0 through I48.92	Atrial fibrillation and flutter
I49.01 through I49.9	Other cardiac arrhythmias
I50.1 through I50.9	Heart failure
I51.7	Cardiomegaly
I63.00 through I63.9	Cerebral infarction
I67.841 through I67.848	Cerebral vasospasm and vasoconstriction
Q20.0 through Q20.9	Congenital malformations of cardiac chambers and connections
Q21.0 through Q21.9	Congenital malformations of cardiac septa
Q22.0 through Q22.9	Congenital malformations of pulmonary and tricuspid valves
Q23.0 through Q23.9	Congenital malformations of aortic and mitral valves

ICD-10-CM Code	Description
Q24.0 through Q24.9	Other congenital malformations of heart
Q25.0 through Q25.9	Congenital malformations of great arteries
R00.0 through R00.9	Abnormalities of heart beat
R06.00 through R06.09	Dyspnea
R07.2	Precordial pain
R07.89	Other chest pain
R07.9	Chest pain, unspecified
R42	Dizziness and giddiness
R53.81 through R53.83	Other malaise and fatigue
R55	Syncope and collapse
R94.31	Abnormal electrocardiogram
Z48.812	Encounter for surgical aftercare following surgery on the circulatory system
Z82.41	Family history of sudden cardiac death
Z87.74	Personal history of (corrected) congenital malformations of heart and circulatory systems
Z94.1	Heart transplant status
Z95.0	Presence of cardiac pacemaker
Z95.810	Presence of automatic (implantable) cardiac defibrillator

Reviews, Revisions, and Approvals	Date	Approval Date
Converted corporate to local policy.	08/15/2020	
Replaced all instances of "member" with "member/enrollee." References reviewed and updated. This policy provides medical necessity guidelines for Holter monitoring up to 48 hours. For Holter monitoring beyond 48 hours, see clinical decision support criteria.	2/22	
Annual review completed. Minor rewording with no clinical significance. Added the following criteria to I.M. "Evaluation of recurrent chronic heart failure, when arrhythmia is suspected" and I.N. "Evaluation of possible arrhythmias post ablation procedures". References reviewed and updated. Specialist review.	10/22	1/14/23
Added new ICD-10 codes I25.112, I25.702, I25.712, I25.722, I25.732, I25.752, I25.762 and I25.792 to policy.	5/23	7/24/23

References

1. Crawford MH, Bernstein SJ, Deedwania PC, DiMarco JP, Ferrick KJ, Garson A Jr, Green LA, Greene HL, Silka MJ, Stone PH, Tracy CM. ACC/AHA guidelines for ambulatory electrocardiography: executive summary and recommendations: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the Guidelines for Ambulatory Electrocardiography). *Circulation*. 1999;100:886 to 893
2. Ommen SR, Mittal S, Burke MA, , et al. 2020 AHA/ACC guideline for the diagnosis and treatment of Patients with hypertrophic cardiomyopathy: a report of the American College of Cardiology/American Heart Association Joint Committee on Practice Guidelines. *Circulation*. 2020 Dec 22;142(25):e533 to e557.
3. Gray B, Kirby A, Kabunga P, et al. Twelve-lead ambulatory electrocardiographic monitoring in Brugada syndrome: Potential diagnostic and prognostic implications. *Heart Rhythm*. 2017 Jun;14(6):866 to 874. doi: 10.1016/j.hrthm.2017.02.026.
4. Groeneweg JA, Bhonsale A, James CA, et al. Clinical Presentation, Long-Term Follow-Up, and Outcomes of 1001 Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy Patients and Family Members. *Circ Cardiovasc Genet* 2015; 8:437.
5. Madias C. Ambulatory ECG monitoring. UpToDate. www.uptodate.com. Updated August 20, 2020. Accessed July 21, 2022.
6. Steinberg JS, Varma N, Cygankiewicz I, et al. 2017 ISHNE-HRS expert consensus statement on ambulatory ECG and external cardiac monitoring/telemetry [published correction appears in Heart Rhythm. 2018 Mar 28;:] [published correction appears in Heart Rhythm. 2018 Aug;15(8):1276]. *Heart Rhythm*. 2017;14(7):e55 to e96. doi:10.1016/j.hrthm.2017.03.038
7. Sen-Chowdhry S, Lowe MD, Sporton SC, McKenna WJ. Arrhythmogenic right ventricular cardiomyopathy: clinical presentation, diagnosis, and management. *Am J Med* 2004; 117:685.
8. Kusumoto FM, Schoenfeld MH, et al. 2018 ACC/AHA/HRS guideline on the evaluation and management of patients with bradycardia and cardiac conduction delay: 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*. 2019;16(9):e227 to e279. doi:10.1016/j.hrthm.2018.10.036
9. McKenna WJ. Arrhythmogenic right ventricular cardiomyopathy: diagnostic evaluation and diagnosis. UpToDate. www.uptodate.com. Updated December 16, 2019. Accessed July 21, 2022.
10. Blaufox AD. Irregular heart rhythm (arrhythmias) in children. UpToDate. www.uptodate.com. Updated February 15, 2022. Accessed July 21, 2022.
11. Local coverage determination: electrocardiographic (EKG or ECG) monitoring (Holter or real-time monitoring) (L34636). Centers for Medicare and Medicaid Services Web site. http://www.cms.hhs.gov/mcd/search.asp. Published October 1, 2015 (revised October 28, 2021). Accessed August 3, 2022.
12. Local coverage determination: long-term wearable electrocardiographic monitoring (WEM) (L33380). Centers for Medicare and Medicaid Services Web site. http://www.cms.hhs.gov/mcd/search.asp. Published October 1, 2015 (revised October 1, 2019). Accessed August 3, 2022.

13. Passman R. Atrial fibrillation: catheter ablation. UpToDate. www.uptodate.com. Updated May 27, 2022. Accessed August 16, 2022.
14. Bansal A, Joshi R. Portable out-of-hospital electrocardiography: A review of current technologies. *J Arrhythm*. 2018;34(2):129 to 138. Published 2018 Feb 23. doi:10.1002/joa3.12035
15. Giancaterino S, Lupercio F, Nishimura M, Hsu JC. Current and Future Use of Insertable Cardiac Monitors. *JACC Clin Electrophysiol*. 2018;4(11):1383 to 1396. doi:10.1016/j.jacep.2018.06.001

Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. LHCC makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable LHCC administrative policies and procedures.

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This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care and are solely responsible for the medical advice and treatment of members/enrollees. This clinical policy is not intended to recommend treatment for members/enrollees. Members/enrollees should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom LHCC has no control or right of control. Providers are not agents or employees of LHCC.