



Ambulatory ECG Monitoring

Last Revision/Review Date: July 21, 2021

P&P # C.6.20

Policy

This Medical Policy does not constitute medical advice. When deciding coverage, the enrollee's specific plan document must be referenced. The terms of an enrollee's plan document (Certificate of Coverage [COC] or Summary Plan Description [SPD]) may differ from this Medical Policy. In the event of a conflict, the enrollee's specific benefit plan document supersedes this Medical Policy. All reviewers must first identify enrollee eligibility, any federal or state regulatory requirements, and the plan benefit coverage prior to use of this Medical Policy. Other Policies and Coverage Determination Guidelines may apply. Quartz reserves the right, in its sole discretion, to modify its Policies and Guidelines as necessary.

Procedure

A. Documentation Required:

1. Documentation of cardiac symptoms and/or the presence of potential arrhythmias necessitating cardiac monitoring.
2. Order from Physician or Advanced Practice Provider (NP or PA).
3. Results and interpretation of a cardiac rhythm monitoring (ECG), telemetry report from an inpatient stay, or noninvasive ambulatory monitoring (e.g. Holter monitor, Zio® Patch, external loop recorders) if applicable.

B. Criteria for Medical Necessity:

1. Cardiac monitoring using long term (>48 hour), continuous external ECG rhythm recording and storage (CPT/HCPCS Codes 93241 - 93248 33285) (e.g., Zio® Patch, CAM™ Patch, BodyGuardian®) is considered medically necessary when **ONE** of the following criteria are met:
 - a) Symptoms are occurring infrequently such that an arrhythmia is unlikely to be documented and diagnosed by a ≤48 hour external ambulatory ECG monitor (e.g. 48-hour Holter monitor) or recent ambulatory ECG monitor, inpatient or outpatient telemetry was non-diagnostic, and the symptoms are consistent with cardiac arrhythmias which include **ONE** of the following:
 - i. Palpitations; **OR**
 - ii. Syncope; **OR**
 - iii. Lightheadedness; **OR**
 - b) Further cardiac evaluation of the cause of cryptogenic stroke is needed after an initial atrial fibrillation work up including a ≤48 hour external ambulatory ECG monitoring or inpatient telemetry monitoring is negative, and the Patient has not had > 48 hour ambulatory ECG monitoring (e.g., Zio® Patch, CAM™ Patch, BodyGuardian®) monitoring within past 1 year.
 - c) To evaluate for the presence of arrhythmias when **ONE** of the following criteria are met:
 - i. After initiating drug therapy for an arrhythmia; **OR**

- ii. After discontinuation of drug therapy; **OR**
 - iii. After an ablation procedure for arrhythmia; **OR**
 - iv. A patient with post-operative atrial fibrillation in the first 3 months after cardiac surgery to confirm the absence of atrial fibrillation prior to the discontinuation of anticoagulation therapy.
2. Initial cardiac monitoring by Implantable loop recorder (e.g., Reveal LINQ™, Reveal™ XT) is medically necessary when **ONE** of the following criteria are met:
- a) Patient has recurrent, unexplained symptoms consistent with cardiac arrhythmias (palpitations, syncope or lightheadedness) and previous trial of noninvasive ambulatory ECG monitoring/recording (e.g., Zio® Patch, CAM™ Patch, BodyGuardian®) was not successful in capturing infrequent occurring events **OR** symptoms occur infrequently (e.g., less than once a month), and are unlikely to be captured with noninvasive external ECG monitoring.
 - b) Further cardiac evaluation of the cause of cryptogenic stroke is needed after an initial atrial fibrillation, work up including 24-hour external ECG monitoring or inpatient telemetry monitoring **AND** noninvasive external loop recorders (e.g., Zio® Patch, CAM™ Patch) monitoring is negative.

C. Indications Considered Not Medically Necessary: *(Not all inclusive)*

- 1. Replacement of batteries or complete Implantable loop recorder devices (e.g. Reveal LINQ™, Reveal™ XT) that have been in place for 2 or more years in a patient who does not continue to meet initial criteria for Implantable loop recorders or in a patient whose monitoring has been non-diagnostic.

CPT/ HCPCS Codes

33285	Insertion, subcutaneous cardiac rhythm monitor, including programming
93241	External electrocardiographic recording for more than 48 hours up to 7 days by continuous rhythm recording and storage; includes recording, scanning analysis with report, review and interpretation
93242	External electrocardiographic recording for more than 48 hours up to 7 days by continuous rhythm recording and storage; recording (includes connection and initial recording)
93243	External electrocardiographic recording for more than 48 hours up to 7 days by continuous rhythm recording and storage; scanning analysis with report
93244	External electrocardiographic recording for more than 48 hours up to 7 days by continuous rhythm recording and storage; review and interpretation
93245	External electrocardiographic recording for more than 7 days up to 15 days by continuous rhythm recording and storage; includes recording, scanning analysis with report, review and interpretation
93246	External electrocardiographic recording for more than 7 days up to 15 days by continuous rhythm recording and storage; recording (includes connection and initial recording)
93247	External electrocardiographic recording for more than 7 days up to 15 days by continuous rhythm recording and storage; scanning analysis with report
93248	External electrocardiographic recording for more than 7 days up to 15 days by continuous rhythm recording and storage; review and interpretation

References

- Al-Khatib SM, et al. 2017 AHA/ACC/HRS Guideline for Management of Patients with Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death. *Heart Rhythm*(2017), doi: 10.1016/j.hrthm.2017.10.036.
- Barrett et al. Comparison of 24-hour Holter monitoring with 14-day novel adhesive patch electrocardiographic monitoring. *Am J Med.* 2014;127(1)95.e11-95.e17.
- Calkins H, Hindricks G, Cappato R, et al. 2017 HRS/EHRA/ECAS/APHRS/SOLAECE Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation. *Heart Rhythm* 2017;14(10):e275-e43..
- Caplan, L. Overview of the evaluation of stroke. *UpToDate* Last updated Jan 2, 2020. Accessed Dec 21, 2020.
- Chen LY, et al. Atrial fibrillation burden: moving beyond atrial fibrillation as a binary entity. *Circulation.* 2018;137:e623-e644.
- Davtyan K, Shatakhtsyan V, Poghosyan H, Deev A, Tarasov A, Kharlap M, et al. Radiofrequency versus Cryoballoon Ablation of Atrial Fibrillation: An Evaluation Using ECG, Holter Monitoring, and Implantable Loop Recorders to Monitor Absolute and Clinical Effectiveness. *Biomed Res Int.* 2018 Mar 12;2018:3629384.
- Dobrev D, Aguilar M, Heijman J, Guichard JB, Nattel S. Postoperative atrial fibrillation: mechanisms, manifestations and management. *Nat Rev Cardiol.* 2019 Jul;16(7):417-436. doi: 10.1038/s41569-019-0166-5. PMID: 30792496.
- Furukawa T, Maggi R, Bertolone C, Fontana D, Brignole M. Additional diagnostic value of very prolonged observation by implantable loop recorder in patients with unexplained syncope. [J Cardiovasc Electrophysiol.](#) 2012 Jan;23(1):67-71. doi: 10.1111/j.1540-8167.2011.02133.x. Epub 2011 Jul 21. Accessed January 4, 2019. <https://www.ncbi.nlm.nih.gov/pubmed?term=21777327>
- Galli A, Ambrosini F, Lombardi F. Holter Monitoring and Loop Recorders: From Research to Clinical Practice. *Arrhythm Electrophysiol Rev.* 2016;5(2):136-143. doi:10.15420/AER.2016.17.2
- Hayes, Inc. Health Technology Assessment.
- Implantable cardiac loop recorders for detection of atrial fibrillation following cryptogenic stroke. Publication June 15, 2017. Annual review July 18, 2019. Archived July 14, 2020. Accessed Dec 22, 2020.
 - Implantable cardiac loop recorders for diagnosis and management of syncope in adults. Publication March 10, 2016. Annual review June 16, 2020. Accessed Dec 22, 2020.
 - Minimally invasive surgical (MIS) procedures for treatment of atrial fibrillation. Publication Aug 25, 2016. Annual review Dec 9, 2020. Accessed Jan 6, 2021.
 - Zio Patch (iRhythm Technologies Inc.) Long-term Ambulatory Cardiac Rhythm Monitoring. Publication Feb 7, 2019. Annual Review May 12, 2020. Accessed Dec 22, 2020.
- Hindricks G, Potpara T, Dagres N, et al. ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). *European Heart Journal.* 2020;00:1-126. <https://doi.org/10.1093/eurheartj/ehaa612>

Hugh C, Hindricks G, Cappato R, Kin Y, et al., 2017 HRS/EHRA/ECAS/APHS/SOLAECE expert consensus statement on catheter and surgical ablation of atrial fibrillation.

January CT, Wann LS, Alpert JS, et al.. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol*. 2014;64:e1–76.

January CT, Wann LS, Calkins H, et al. 2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *Circulation*. 2019;140(2):e125-e151.

Jonas DE, Kahwati LC, Yun JDY, Middleton JC, Coker-Schwimmer M, Asher GN. Screening for atrial fibrillation with electrocardiography: evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2018;320(5):485-498.

Kaura, A., Sztriha, L., Chan, F.K. et al.. Early prolonged ambulatory cardiac monitoring in stroke (EPACS): an open-label randomised controlled trial. *Eur J Med Res* **24**, 25 (2019). <https://doi.org/10.1186/s40001-019-0383-8>

Kusiak A, Jastrzębski M, Bednarski A, Kułakowski P, Piotrowski R, Koźluk E, et al. Diagnostic value of implantable loop recorder in patients undergoing cryoballoon ablation of atrial fibrillation. *Ann Noninvasive Electrocardiol*. 2020 Jul;25(4):e12733.

Kusumoto FM, Schoenfeld MH, Barrett C, et al. 2018 ACC/AHA/HRS Guideline on the Evaluation and Management of Patients With Bradycardia and Cardiac Conduction Delay: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol* 2018.

Lee, R. Atrial fibrillation and flutter after cardiac surgery. *UpToDate* Last updated Feb 22, 2021. Accessed May 17, 2021.

Madias, C. Ambulatory ECG monitoring. *UpToDate*. Last updated Aug 20, 2020 Accessed Dec 21, 2020.

Shen WK, Sheldon RS, Benditt DG, et al. 2017 ACC/AHA/HRS Guideline for the Evaluation and Management of Patients With Syncope: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol* 2017; 70:e39.

Solbiati M, Costantino G, Casazza G, et al. Implantable loop recorder versus conventional diagnostic workup for unexplained recurrent syncope. *Cochrane Database Syst. Rev.* 2016;4: DOI: 10.1002/14651858.CD011637.pub2.

Steinberg, J. et al. 2017 ISHNE-HRS expert consensus statement on ambulatory ECG and external cardiac monitoring/telemetry. *Heart Rhythm*, 2017-07-01, Volume 14, Issue 7, Pages e55-e96

U.S. Food & Drug Administration. AngelMed Guardian System-P150009. Summary of Safety and Effectiveness Data. Date of FDA Notice of Approval April 9, 2018. https://www.accessdata.fda.gov/cdrh_docs/pdf15/P150009B.pdf

Wechselberger S, Kronborg M, Huo Y, Piorkowski J, Neudeck S, Päßler E, et al. Continuous monitoring after atrial fibrillation ablation: the LINQ AF study. *Europace*. 2018 Nov 1;20(FI_3):f312-f320.

Yenikomshian M, Jarvis J, Patton C, Yee C, Mortimer R, et al. Cardiac arrhythmia detection outcomes among patients monitored with the Zio patch system: a systematic literature review. *Curr Med Res Opin.* 2019 Oct;35(10):1659-1670.