Genetic Testing for Cardiovascular Disease

Guideline Number: MPG390.05
Approval Date: February 14, 2024

➲ Terms and Conditions

Table of Contents **Page**

Policy Summary 1
Applicable Codes 2
References 3
Guideline History/Revision Information 4
Purpose 5
Terms and Conditions 5

Related Medicare Advantage Policy Guidelines

- Biomarkers in Cardiovascular Risk Assessment
- Molecular Pathology/Molecular Diagnostics/Genetic Testing
- Tier 2 Molecular Pathology Procedures

Related Medicare Advantage Reimbursement Policies

- Clinical Laboratory Improvement Amendments (CLIA) ID Requirement Policy, Professional
- Laboratory Services Policy, Professional
- Molecular Pathology Policy, Professional and Facility

Related Medicare Advantage Coverage Summary

- Molecular Pathology/Molecular Diagnostics/Genetic Testing

Policy Summary

➲ See Purpose

Overview

The genetic basis of cardiovascular disease is an area of rapidly expanding knowledge. To date, identification of genetic variants associated with cardiovascular disease includes hypertrophic and dilated cardiomyopathy (associated with mutations in sarcomere and structural genes), arrhythmogenic cardiomyopathy (associated with mutations in desmosome genes), inherited arrhythmias (associated with mutations in transmembrane ion channels genes), and Marfan and related syndromes (associated with mutations in genes encoding connective tissue elements). Association does not necessarily translate to improvement in patient care.

In certain circumstances, genetic testing for inherited cardiovascular disease in patients with the corresponding appropriate phenotypic medical condition could have the potential to assist patient management in the Medicare population. However, given the complexity and rapidly expanding knowledge in this topic area, there is also a potential for testing that does not help the patient or leads to confusion. Specialized clinical expertise in cardiovascular medicine in addition to advanced knowledge in both genetic variation and effect on gene function is required to facilitate optimal outcomes for patients.

Guidelines

Genetic testing for hereditary cardiovascular disease will be considered medically reasonable and necessary if:

- The patient has rigorous disease-appropriate phenotyping to establish clinical diagnosis or suspected diagnosis for which the test results would directly impact the management of the patient's condition, prior to ordering the test; **and**
- The evidence for the gene-disease association is evaluated by the evidence-based, transparent, peer-reviewed process of the National Institutes of Health (NIH) sponsored Clinical Genome Resource (ClinGen) and is determined to demonstrate actionability in clinical decision making, meeting all bulleted metrics:
  - Disease severity of sudden death, possible death or major morbidity, modest morbidity,
  - Substantial or moderate evidence of a > 40% likelihood of disease,
  - Substantial or moderate evidence of a highly effective or moderately effective intervention,

- The nature of intervention is either low risk/medically acceptable/low intensity intervention or moderately acceptable/risk/intensive interventions,

and

- Clinical validity and qualitative descriptors from Moderate, Strong & Definitive with contradictory evidence **not** being reported as disputed or refuted.

Limitations

The following are considered not medically reasonable and necessary:

- A genetic test where either analytical validity, clinical validity, or clinical utility has not been established.
- Genetic testing in patients who do not demonstrate the disease-appropriate phenotype of the gene-disease association.
- Genetic testing of asymptomatic patients.
- Genetic testing solely for purposes of proband identification.
- Genetic testing with family history as the only indication.
- Gene tests for cardiovascular disease are considered germline testing, and therefore only permitted once per beneficiary's lifecycle.

No genes currently meet criteria for coverage as outlined.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this guideline does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
Non-Covered	
0119U	Cardiology, ceramides by liquid chromatography-tandem mass spectrometry, plasma, quantitative report with risk score for major cardiovascular events
0237U	Cardiac ion channelopathies (e.g., Brugada syndrome, long QT syndrome, short QT syndrome, catecholaminergic polymorphic ventricular tachycardia), genomic sequence analysis panel including ANK2, CASQ2, CAV3, KCNE1, KCNE2, KCNH2, KCNJ2, KCNQ1, RYR2, and SCN5A, including small sequence changes in exonic and intronic regions, deletions, duplications, mobile element insertions, and variants in non-uniquely mappable regions
0401U	Cardiology (coronary heart disease [CHD]), 9 genes (12 variants), targeted variant genotyping, blood, saliva, or buccal swab, algorithm reported as a genetic risk score for a coronary event (Effective 07/01/2023)
81161	DMD (dystrophin) (e.g., Duchenne/Becker muscular dystrophy) deletion analysis, and duplication analysis, if performed
81410	Aortic dysfunction or dilation (e.g., Marfan syndrome, Loeys Dietz syndrome, Ehler Danlos syndrome type IV, arterial tortuosity syndrome); genomic sequence analysis panel, must include sequencing of at least 9 genes, including FBN1, TGFBR1, TGFBR2, COL3A1, MYH11, ACTA2, SLC2A10, SMAD3, and MYLK
81411	Aortic dysfunction or dilation (e.g., Marfan syndrome, Loeys Dietz syndrome, Ehler Danlos syndrome type IV, arterial tortuosity syndrome); duplication/deletion analysis panel, must include analyses for TGFBR1, TGFBR2, MYH11, and COL3A1
81413	Cardiac ion channelopathies (e.g., Brugada syndrome, long QT syndrome, short QT syndrome, catecholaminergic polymorphic ventricular tachycardia); genomic sequence analysis panel, must include sequencing of at least 10 genes, including ANK2, CASQ2, CAV3, KCNE1, KCNE2, KCNH2, KCNJ2, KCNQ1, RYR2, and SCN5A
81414	Cardiac ion channelopathies (e.g., Brugada syndrome, long QT syndrome, short QT syndrome, catecholaminergic polymorphic ventricular tachycardia); duplication/deletion gene analysis panel, must include analysis of at least 2 genes, including KCNH2 and KCNQ1
81415	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis

CPT Code	Description
Non-Covered	
81416	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator exome (e.g., parents, siblings) (List separately in addition to code for primary procedure)
81417	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained exome sequence (e.g., updated knowledge or unrelated condition/syndrome)
81439	Hereditary cardiomyopathy (e.g., hypertrophic cardiomyopathy, dilated cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy), genomic sequence analysis panel, must include sequencing of at least 5 cardiomyopathy-related genes (e.g., DSG2, MYBPC3, MYH7, PKP2, TTN)
81442	Noonan spectrum disorders (e.g., Noonan syndrome, cardio-facio-cutaneous syndrome, Costello syndrome, LEOPARD syndrome, Noonan-like syndrome), genomic sequence analysis panel, must include sequencing of at least 12 genes, including BRAF, CBL, HRAS, KRAS, MAP2K1, MAP2K2, NRAS, PTPN11, RAF1, RIT1, SHOC2, and SOS1
81493	Coronary artery disease, mRNA, gene expression profiling by real-time RT-PCR of 23 genes, utilizing whole peripheral blood, algorithm reported as a risk score

References

CMS Local Coverage Determinations (LCDs) and Articles

LCD	Article	Contractor	Medicare Part A	Medicare Part B
Genetic Testing for Cardiovascular Disease				
L39084 Genetic Testing for Cardiovascular Disease	A58797 Billing and Coding: Genetic Testing for Cardiovascular Disease	First Coast	FL, PR, VI	FL, PR, VI
L39082 Genetic Testing for Cardiovascular Disease	A58795 Billing and Coding: Genetic Testing for Cardiovascular Disease	Novitas	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX
Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing				
L36139 MolDX: Biomarkers in Cardiovascular Risk Assessment	A54685 Billing and Coding: MolDX: Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing	CGS	KY, OH	KY, OH
L36358 MolDX: Biomarkers in Cardiovascular Risk Assessment	A54975 Billing and Coding: MolDX: Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing	Noridian	AS, CA, GU, HI, MP, NV	AS, CA, GU, HI, MP, NV
L36362 MolDX: Biomarkers in Cardiovascular Risk Assessment	A54976 Billing and Coding: MolDX: Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing	Noridian	AK, AZ, ID, MT, ND, OR, SD, UT, WA, WY	AK, AZ, ID, MT, ND, OR, SD, UT, WA, WY
L36129 MolDX: Biomarkers in Cardiovascular Risk Assessment	A53605 Billing and Coding: MolDX: Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing	Palmetto	AL, GA, NC, SC, TN, VA, WV	AL, GA, NC, SC, TN, VA, WV

LCD	Article	Contractor	Medicare Part A	Medicare Part B
Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing				
L36523 MolDX: Biomarkers in Cardiovascular Risk Assessment	A55235 Billing and Coding: MolDX: Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C) Testing	WPS	IA, IN, KS, MI, MO, NE	IA, IN, KS, MI, MO, NE
General Molecular Diagnostic Tests				
L36021 Molecular Diagnostic Tests (MDT)	A56973 Billing and Coding: MolDX: Molecular Diagnostic Tests (MDT)	CGS	KY, OH	KY, OH
L35160 MolDX: Molecular Diagnostic Tests (MDT)	A57526 Billing and Coding: MolDX: Molecular Diagnostic Tests (MDT)	Noridian	AS, CA, GU, HI, MP, NV	AS, CA, GU, HI, MP, NV
L36256 MolDX: Molecular Diagnostic Tests (MDT)	A57527 Billing and Coding: MolDX: Molecular Diagnostic Tests (MDT)	Noridian	AK, AZ, ID, MT, ND, OR, SD, UT, WA, WY	AK, AZ, ID, MT, ND, OR, SD, UT, WA, WY
L35025 MolDX: Molecular Diagnostic Tests (MDT)	A56853 Billing and Coding: MolDX: Molecular Diagnostic Tests (MDT)	Palmetto	AL, GA, NC, SC, TN, VA, WV	AL, GA, NC, SC, TN, VA, WV
L36807 MolDX: Molecular Diagnostic Tests (MDT)	A57772 Billing and Coding: MolDX: Molecular Diagnostic Tests (MDT)	WPS	IA, IN, KS, MI, MO, NE	IA, IN, KS, MI, MO, NE
L34519 Molecular Pathology Procedures	A58918 Billing and Coding: Molecular Pathology and Genetic Testing	First Coast	FL, PR, VI	FL, PR, VI
L35062 Biomarkers Overview	A58917 Billing and Coding: Molecular Pathology and Genetic Testing	Novitas	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX
L35000 Molecular Pathology Procedures	A56199 Billing and Coding: Molecular Pathology Procedures	NGS	CT, IL, MA, ME, MN, NH, NY, RI, VT, WI	CT, IL, MA, ME, MN, NH, NY, RI, VT, WI

CMS Benefit Policy Manual

Chapter 15; § 80.1–80.1.3 Clinical Laboratory Services

CMS Claims Processing Manual

Chapter 12; § 60 Payment for Pathology Services
Chapter 16, § 10.2 General Explanation of Payment; § 20 Calculation of Payment Rates - Clinical Laboratory Test Fee Schedules; § 40 Billing for Clinical Laboratory Tests

Other(s)

CMS Clinical Laboratory Fee Schedule, CMS Website
Palmetto GBA MolDx Website
Palmetto GBA MolDx Manual, Palmetto GBA MolDx Website

Guideline History/Revision Information

Revisions to this summary document do not in any way modify the requirement that services be provided and documented in accordance with the Medicare guidelines in effect on the date of service in question.

Date	Summary of Changes
08/01/2024	**Related Policies** • Removed reference link to the Medicare Advantage Coverage Summary titled *Laboratory Tests and Services* (retired Aug. 1, 2024)

Date	Summary of Changes
05/01/2024	**Related Policies** • Updated reference link to reflect the current policy title for *Molecular Pathology/Molecular Diagnostics/Genetic Testing*
02/14/2024	**Supporting Information** • Updated *References* section to reflect the most current information • Archived previous policy version MPG390.04

Purpose

The Medicare Advantage Policy Guideline documents are generally used to support UnitedHealthcare Medicare Advantage claims processing activities and facilitate providers' submission of accurate claims for the specified services. The document can be used as a guide to help determine applicable:

- Medicare coding or billing requirements, and/or
- Medical necessity coverage guidelines; including documentation requirements.

UnitedHealthcare follows Medicare guidelines such as NCDs, LCDs, LCAs, and other Medicare manuals for the purposes of determining coverage. It is expected providers retain or have access to appropriate documentation when requested to support coverage. Please utilize the links in the References section above to view the Medicare source materials used to develop this resource document. This document is not a replacement for the Medicare source materials that outline Medicare coverage requirements. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

Terms and Conditions

The Medicare Advantage Policy Guidelines are applicable to UnitedHealthcare Medicare Advantage Plans offered by UnitedHealthcare and its affiliates.

These Policy Guidelines are provided for informational purposes, and do not constitute medical advice. Treating physicians and healthcare providers are solely responsible for determining what care to provide to their patients. Members should always consult their physician before making any decisions about medical care.

Benefit coverage for health services is determined by the member specific benefit plan document* and applicable laws that may require coverage for a specific service. The member specific benefit plan document identifies which services are covered, which are excluded, and which are subject to limitations. In the event of a conflict, the member specific benefit plan document supersedes the Medicare Advantage Policy Guidelines.

Medicare Advantage Policy Guidelines are developed as needed, are regularly reviewed and updated, and are subject to change. They represent a portion of the resources used to support UnitedHealthcare coverage decision making. UnitedHealthcare may modify these Policy Guidelines at any time by publishing a new version of the policy on this website. Medicare source materials used to develop these guidelines include, but are not limited to, CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Medicare Benefit Policy Manual, Medicare Claims Processing Manual, Medicare Program Integrity Manual, Medicare Managed Care Manual, etc. The information presented in the Medicare Advantage Policy Guidelines is believed to be accurate and current as of the date of publication and is provided on an "AS IS" basis. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

You are responsible for submission of accurate claims. Medicare Advantage Policy Guidelines are intended to ensure that coverage decisions are made accurately based on the code or codes that correctly describe the health care services provided. UnitedHealthcare Medicare Advantage Policy Guidelines use Current Procedural Terminology (CPT®), Centers for Medicare and Medicaid Services (CMS), or other coding guidelines. References to CPT® or other sources are for definitional purposes only and do not imply any right to reimbursement or guarantee claims payment.

Medicare Advantage Policy Guidelines are the property of UnitedHealthcare. Unauthorized copying, use, and distribution of this information are strictly prohibited.

*For more information on a specific member's benefit coverage, please call the customer service number on the back of the member ID card or refer to the Administrative Guide.