Genetic testing: cardiac disorders

These services may or may not be covered by your HealthPartners plan. Please see your plan documents for your specific coverage information. If there is a difference between this general information and your plan documents, your plan documents will be used to determine your coverage.

Administrative Process

Prior authorization is required for genetic testing for cardiac disorders including:

- Comprehensive Cardiomyopathy Panels
- Comprehensive Arrhythmia Panels
- Comprehensive Arrhythmia & Cardiomyopathy (Sudden Cardiac or Unexplained Death) Panels
- Genetic testing panels for
  - Hypertrophic Cardiomyopathy (HCM)
  - Dilated Cardiomyopathy (DCM)
  - Arrhythmogenic Cardiomyopathy
  - Restrictive Cardiomyopathy (RCM)
  - Long QT Syndrome (LQTS)
  - Short QT Syndrome (SQTS)
  - Brugada Syndrome (BrS)
  - Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)
  - Familial Hypercholesterolemia (FH)
- Genetic testing for Congenital Heart Malformations
- Post Heart Transplant Gene Expression Panels for Rejection Risk via Peripheral Blood
- Donor-derived Cell Free DNA for Heart Transplant Rejection
- All other genetic testing for cardiac disorders, and
- Testing that is associated with a procedure code listed in “Box A”, below.

Prior authorization is not required for the following genetic test:

- Post Heart Transplant Gene Expression Panels for Rejection Risk via Tissue

Genetic testing for restrictive cardiomyopathy (RCM) via a multigene panel is considered investigational/experimental and therefore not covered.

Genetic testing for Brugada syndrome (BrS) via genes other than SCN5A, including multigene panel analysis, is considered investigational/experimental and therefore not covered.

Post Heart Transplant Gene Expression Panels for Rejection Risk via Tissue is considered investigational/experimental and therefore not covered

Tests that require prior authorization will be reviewed for medical necessity of the testing as a whole. That is, a single coverage decision will apply to all of the tests, services, and/or procedure codes associated with the genetic test, whether they are requested/billed together or separately.

Box A: Genetic testing procedure codes that require prior authorization
Molecular pathology procedures, Tier 2 or unlisted (CPT 81400-81408, 81479)
Unlisted multianalyte assays (CPT 81599)
Any other listed or unlisted laboratory/pathology CPT code when it is used in association with a genetic test

Policy Reference Table

If available, codes are listed below for informational purposes only, and do not guarantee member coverage or provider reimbursement. The list may not be all-inclusive.

Coverage Criteria Sections	Example Tests (Labs)	Common CPT Codes	Common ICD Codes
Comprehensive Cardiomyopathy Panels	Cardiomyopathy Panel (GeneDx)	81439	I42.0, I42.1, I42.2, I42.5, I42.8, I42.9, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	Cardiomyopathy Comprehensive Panels (Invitae)		
	CMNext (Ambry Genetics)		

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Comprehensive Arrhythmia Panels	Arrhythmia Panel (GeneDx)	81413, 81414	I45.81, I49.8, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	Rhythm Next (Ambry Genetics)		
	Arrhythmia Comprehensive Panel (Invitae)		
	Genomic Unity Cardiac Ion Channelopathies Analysis (Variantyx Inc)	0237U	
Comprehensive Arrhythmia & Cardiomyopathy (Sudden Cardiac or Unexplained Death) Panels	Arrhythmia and Cardiomyopathy Comprehensive Panel (Invitae)	81413, 81414, 81439	I42.0, I42.1, I42.2, I42.5, I45.81, I49.8, I42.9, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	CardioNext (Ambry Genetics)		
	Cardiomyopathy and Arrhythmia Panel, Sequencing and Deletion/Duplication (ARUP Laboratories)		
Hypertrophic Cardiomyopathy (HCM)			
Hypertrophic Cardiomyopathy Panels	Hypertrophic Cardiomyopathy Panel (Invitae)	81439, S3865	I42.1, I42.2, I42.9, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	HCMNext (Ambry Genetics)		
	Hypertrophic Cardiomyopathy (HCM) Panel (GeneDx)		
Dilated Cardiomyopathy (DCM)			
Dilated Cardiomyopathy Panels	Dilated Cardiomyopathy Panel (GeneDx)	81439	I42.0, I42.9, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	DCMNext (Ambry Genetics)		
Arrhythmogenic Cardiomyopathy			
Arrhythmogenic Cardiomyopathy Panels	Arrhythmogenic Right Ventricular Cardiomyopathy Panel (GeneDx)	81439	I42.8, I42.9, Z82.41, Z82.49, Z84.81, Z84.89
	Arrhythmogenic Cardiomyopathy Panel (Invitae)		
Restrictive Cardiomyopathy (RCM)			
Restrictive Cardiomyopathy Panels	Restrictive Cardiomyopathy (RCM) Panel (Cincinnati Children's Hospital Medical Center - Molecular Genetics and Cytogenetics Laboratories)	81439	I42.5, I42.8, I42.9, Z82.41, Z82.49
Long QT Syndrome (LQTS)			
Long QT Syndrome Panels	Long QT Syndrome Panel - (Invitae)	81403, 81406, 81407, 81413, 81414, 81479	I45.81, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	LQTS Panel (GeneDx)		
Short QT Syndrome (SQTS)			
Short QT Syndrome Panels	Short QT Syndrome Panel (Invitae)	81403, 81406, 81413, 81414, 81479	Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	Short QT Syndrome Panel (PreventionGenetics, part of Exact Sciences)		
Brugada Syndrome (BrS)			
Brugada Syndrome Panels or *SCN5A* Variant Analysis	Brugada Panel (GeneDx)	81404, 81406, 81407, 81413, 81414, 81479	I49.8, Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	Brugada Syndrome Panel (Invitae)		
	Brugada Panel (GeneDx)	81407, S3861	
Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)			

Catecholaminergic Polymorphic Ventricular Tachycardia Panels	Catecholaminergic Polymorphic Tachycardia Panel (Invitae)	81403, 81405, 81408, 81413, 81414, 81479	Z13.71, Z82.41, Z82.49, Z84.81, Z84.89
	CPVTNext (Ambry Genetics)		
Familial Hypercholesterolemia (FH)			
Familial Hypercholesterolemia (FH) Panels	Familial Hypercholesterolemia (FH) Panel (GeneDX)	81401, 81405, 81406, 81407, 81479	E78, E78.01
	Invitae Familial Hypercholesterolemia Panel (Invitae)		
Congenital Heart Malformations			
Congenital Heart Malformation Panels	Nonsyndromic Congenital Heart Disease Panel (PreventionGenetics, part of Exact Sciences)	81405, 81406, 81407, 81408, 81479	Q20, Q21, Q22, Q23, Q24
	Congenital Heart Disease Panel (Invitae)		
Post Heart Transplant Gene Expression Panels for Rejection Risk via Peripheral Blood			
Post Heart Transplant Gene Expression Panels for Rejection Risk via Peripheral Blood	AlloMap (CareDX)	81595	Z94.1, Z48.21
Post Heart Transplant Gene Expression Panels for Rejection Risk via Tissue			
Post Heart Transplant Gene Expression Panels for Rejection Risk via Tissue	Molecular Microscope MMDX - Heart (Kashi Clinical Laboratories)	0087U	Z94.1, Z48.21
Donor-Derived Cell-Free DNA for Heart Transplant Rejection			
Donor-Derived Cell-Free DNA for Heart Transplant Rejection	AlloSure (CareDX)	81479	Z94.1, Z48.21
	Prospera Heart (Natera)	0493U	
	Viracor TRAC Heart dd-cfDNA (Eurofins)	0118U	

Coverage

Comprehensive Cardiomyopathy Panels

1. Comprehensive cardiomyopathy panels are considered **medically necessary** when:
   - A. The member has a diagnosis of cardiomyopathy, **or**
   - B. The member has a first-degree relative with sudden cardiac death (SCD) **and**
     - i. This relative's autopsy revealed unspecified cardiomyopathy (e.g., cardiomegaly or cardiomyopathy), **or**
     - ii. This relative's autopsy revealed an anatomically normal heart, **and**
       - a) The autopsy did not reveal a cause of death.
2. Comprehensive cardiomyopathy panels are considered **investigational** for all other indications.

Note: Multigene panels that are targeted to the cardiomyopathy phenotype observed are recommended by professional guidelines).

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Comprehensive Arrhythmia Panels

1. Comprehensive arrhythmia panels are considered **medically necessary** when:
   - A. The member meets one of the following:
     - i. The member has a first-degree relative with sudden unexplained cardiac death (SCD) or sudden unexplained death (SUD)before 50 years, **or**
     - ii. The member has a first-degree relative with sudden cardiac death (SCD) at age 50 years or older **and**
       - a) The deceased individual had family history of premature SCD, **or**

b) The deceased individual's death is suspicious for genetic heart disease **or**

B. The member has unexplained sudden cardiac arrest, **and**

i. Clinical tests were non-diagnostic for reversible, ischemic, or structural causes (e.g., ECG, cardiac stress tests, echocardiogram, intravenous pharmacologic provocation testing).

2. Comprehensive arrhythmia panels are considered **investigational** for all other indications.

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Comprehensive Arrhythmia and Cardiomyopathy (Sudden Cardiac or Unexplained Death) Panels

1. Comprehensive panels including genes for both cardiomyopathies and arrhythmias are considered medically necessary when:

A. The member meets the above clinical criteria for Comprehensive Cardiomyopathy Panels, **and**

B. The member meets the above clinical criteria for Comprehensive Arrhythmia Panels

2. Comprehensive panels including genes for both arrhythmias **and** cardiomyopathies are considered **investigational** for all other indications.

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Hypertrophic Cardiomyopathy (HCM)

Hypertrophic Cardiomyopathy Panels

1. Genetic testing for hypertrophic cardiomyopathy via a multigene panel is considered medically necessary when:

A. The member has unexplained left ventricular hypertrophy (LVH), as defined by myocardial wall thickness of 15mm or greater (in adults), or a z-score greater than or equal to 2 (in children) based on echocardiogram or cardiac MRI **or**

B. The member has a first-degree relative with sudden cardiac death (SCD), **and**

i. Autopsy revealed an HCM phenotype.

2. Genetic testing for hypertrophic cardiomyopathy via a multigene panel is considered investigational for all other indications.

Note: If a panel is performed, the appropriate panel code should be used

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Dilated Cardiomyopathy (DCM)

Dilated Cardiomyopathy Panels

1. Genetic testing for dilated cardiomyopathy (DCM) via a multigene panel is considered **medically necessary** when:

A. The member has findings characteristic of DCM including all of the following:

i. Left ventricular enlargement based on echocardiogram or cardiac MRI, **and**

ii. Systolic dysfunction (e.g., ejection fraction less than 50%) based on echocardiogram, cardiac MRI, or left ventricular angiogram, **and**

iii. Non-genetic causes of DCM have been ruled out, such as prior myocardial infarction from coronary artery disease, valvular and congenital heart disease, toxins (most commonly, anthracyclines or other chemotherapeutic agents; various drugs with idiosyncratic reactions), thyroid disease, inflammatory or infectious conditions, severe long-standing hypertension, and radiation, **or**

B. The member has a first-degree relative with sudden cardiac death (SCD), **and**

i. Autopsy revealed a DCM phenotype.

2. Genetic testing for DCM via a multigene panel is considered **investigational** for all other indications.

Note: If a panel is performed, the appropriate panel code should be used

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Arrhythmogenic Cardiomyopathy

Arrhythmogenic Cardiomyopathy Panels

1. Genetic testing for arrhythmogenic right ventricular cardiomyopathy via a multigene panel is considered **medically necessary** when:

A. The member has any one of the following:

i. On echo:

a) Regional right ventricular (RV) akinesia or dyskinesia, **or**

(a) Aneurysm; **and**

b) At least one of the following (end diastole):

(a) PLAX RVOT $\geq$ to 32 mm (PLAX/BSA $\geq$19 mm/m2), **or**

(b) PSAX RVOT $\geq$ 36 mm (PSAX/BSA $\geq$21 mm/m2), **or**

(c) Fractional area change $\leq$ 33%, **or**

ii. On MRI:
  a) Regional RV akinesia or dyskinesia, **or**
    (a) Dyssynchronous RV contraction; **and**
  b) At least one of the following
    (a) Rao RVEDV/BSA ≥110mL/m2 (male), ≥ 100 mL/m2 (female), **or**
    (b) RVEF ≤40%, **or**

iii. On RV Angiography
  a) Regional RV akinesia, dyskinesia or aneurysm, **or**

iv. Endomyocardial biopsy showing fibrous replacement of the RV free wall myocardium in more than one sample, with or without fatty replacement, **and:**
  a) Residual myocytes <60% by morphometric analysis (or <50% if estimated), **or**

v. On ECG
  a) Inverted T waves in right precordial leads (V1, V2, and V3) or beyond in individuals age > 14 years (in the absence of complete right bundle branch block QRS ≥ to 120ms), **or**
  b) Epsilon wave (reproducible low-amplitude signals between end of QRS complex to onset of the T wave) in the right precordial leads (V1 to V3), **or**
  c) Nonsustained or sustained VT of LBBB with superior axis (negative or indeterminate QRS in leads II, III, and aVF and positive in lead**, or**

vi. On Family History
  a) ARVC confirmed in a first-degree relative who meets current Task Force Criteria **or**
  b) ARVC confirmed pathologically at autopsy or surgery in a first-degree relative, **or**
  c) Identification of a pathogenic mutation categorized as associated or probably associated with ARVC in the patient under evaluation **or**

B. The member has any two of the following:
i. On echo, either:
  a) Regional RV akinesia or dyskinesia **or**
    (a) Aneurysm**, and**
  b) At least one of the following (end diastole):
    (a) PLAX RVOT >29 mm to <32 mm (PLAX/BSA >16 to <19 mm/m2) **or**
    (b) (PSAX RVOT >32 to <36 mm (PSAX/BSA >18 to <21 mm/m2) **or**
    (c) Fractional area change >33 to <40%, **or**

ii. On MRI, either
  a) Regional RV akinesia or dyskinesia **or**
    (a) Dyssynchronous RV contraction **and**
  b) At least one of the following:
    (a) Rao RVEDV/BSA >100 to <110 mL/m2 (male), >90 to 100 mL/m2 (female), **or**
    (b) RVEF >40 to <45%, **or**

iii. Endomyocardial biopsy showing fibrous replacement of the RV free wall myocardium in more than 1 sample, with or without fatty replacement **and**
  a) Residual myocytes 60% to 75% by morphometric analysis (or 50% to 65% if estimated), **or**

C. On ECG
i. Inverted T waves in leads V1 and V2 in individuals >14 years of age (in the absence of complete RBBB), or in V4, V5, or V6, **or**
ii. Inverted T waves in leads V1, V2, V3, and V4 in individuals >14 years of age in the presence of complete RBBB, **or**
iii. Late potentials by SAECG in >1 of 3 parameters in the absence of QRS duration of >110ms on the standard ECG:
  a) Filtered QRS duration (fQRS) >114 ms **or**
  b) Duration of terminal QRS <40 μV (low-amplitude signal duration) ≥38 ms, **or**
  c) Root-mean-square voltage of terminal 40 ms <20 μV, **or**

iv. Terminal activation duration of QRS >55 ms measured from the nadir of the S wave to the end of the QRS, including R' in V1, V2, or V3 in the absence of complete RBBB, **or**

v. Nonsustained or sustained VT or RV outflow configuration, LBBB morphology with inferior axis (positive QRS in II, III and aVF and negative in lead aVL) or of unknown axis, **or**

vi. >500 ventricular extrasystoles per 24 hours (Holter), **or**

D. On Family History

i. History of ARVC in a first-degree relative in whom it is not possible or practical to determine whether the family member meets current Task Force Criteria **or**

ii. Premature sudden death (<35 years of age) due to suspected ARVC in a first-degree relative **or**

iii. ARVC confirmed pathologically or by current Task Force Criteria in second-degree relative

2. Genetic testing for arrhythmogenic cardiomyopathy via a multigene panel is considered **investigational** for all other indications.

Note: If a panel is performed, the appropriate panel code should be used

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Restrictive Cardiomyopathy (RCM)

Restrictive Cardiomyopathy Panels

1. Genetic testing for restrictive cardiomyopathy (RCM) via a multigene panel is considered **investigational**.

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Long QT Syndrome (LQTS)

Long QT Syndrome Panels

1. Genetic testing for long QT syndrome (LQTS) via multigene panel is considered **medically necessary** when:

A. The member is asymptomatic, **and**

i. The member has a confirmed prolonged QTc (greater than 460ms prepuberty, greater than 480ms for adults) on resting ECG and/or provocative stress testing with exercise or during intravenous pharmacologic provocation testing (e.g., with epinephrine), **or**

ii. The member has a close relative with a clinical diagnosis of LQTS, whose genetic status is unknown, **or**

B. The member is symptomatic (for example: a history of syncope, cardiac arrest, and/or aborted sudden death), **and**

i. A cardiologist has established a strong clinical suspicion for LQTS based on examination of the patient's clinical history, family history, and expressed electrographic phenotype, **or**

ii. The member has a Schwartz score greater than or equal to 3.0, **and**

iii. Non-genetic causes of a prolonged QTc interval have been ruled out, such as QT-prolonging drugs, hypokalemia, structural heart disease, or certain neurologic conditions including subarachnoid bleed.

2. Genetic testing for long QT syndrome (LQTS) via multigene panel is considered **investigational** for all other indications.

Note: If a panel is performed, the appropriate panel code should be used

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Short QT Syndrome (SQTS)

Short QT Syndrome Panels

1. Genetic testing for short QT syndrome (SQTS) via multigene panel via a multigene panel is considered **medically necessary** when:

A. The member has a QTc of 330ms or less, **or**

B. The member has a SQTS diagnostic score of 4 or greater utilizing the following criteria, **or**

Criteria	Points
Electrocardiogram**	
QTc less than 370 ms	1
QTc less than 350 ms	2
QTc less than 330 ms	3
J point-T peak interval*** less than 120 ms	1
*Clinical history****	
History of sudden cardiac arrest	2
Documented polymorphic VT or VF	2

Unexplained syncope	1
Atrial fibrillation	1
*Family history*****	
First- or second-degree relative with high-probability SQTS	2
First- or second-degree relative with autopsy-negative SCD	1
Sudden infant death syndrome	1
*Genotype	
Genotype positive	2
Mutation of undetermined significance in a culprit gene	1

SQTS score: High-probability SQTS: greater than or equal to 4 points, intermediate-probability SQTS: 3 points, low-probability SQTS: less than or equal to 2 points.
**Electrocardiogram: must be recorded in the absence of modifiers known to shorten the QT.
***J point-T peak interval must be measured in the precordial lead with the greatest amplitude T-wave.
****Clinical history: events must occur in the absence of an identifiable etiology, including structural heart disease. Points can only be received for 1 of cardiac arrest, documented polymorphic VT, or unexplained syncope.
*****Family history: points can only be received once in this section.
*A minimum of 1 point must be obtained in the electrocardiographic section in order to obtain additional points.

C. The member is asymptomatic, **and**
i. The member has a first-degree relative with a clinical diagnosis of SQTS, whose genetic status is unknown.

2. Genetic testing for short QT syndrome (SQTS) via multigene panel is considered **investigational** for all other indications.

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Brugada Syndrome (BrS)

Brugada Syndrome Panels or SCN5A Variant Analysis

1. Genetic testing for Brugada syndrome (BrS) via SCN5A variant analysis is considered medically necessary when:
   A. The member meets one of the following:
      i. Type 1 ECG (elevation of the J wave greater than or equal to 2 mm with a negative T wave and ST segment that is coved type and gradually descending) in more than one right precordial lead with or without administration of a sodium channel blocker (i.e., flecainide, pilsicainide, ajmaline, or procainamide) **or**
      ii. Type 2 ECG (elevation of the J wave to greater than or equal to 2 mm with a positive or biphasic T wave; ST segment with saddle-back configuration and elevated greater than or equal to1 mm) in more than one right precordial lead under baseline conditions with conversion to type 1 ECG following challenge with a sodium channel blocker **or**
      iii. Type 3 ECG (elevation of the J wave greater than or equal to 2 mm with a positive T wave; ST segment with saddle-back configuration and elevated less than 1 mm) in more than one lead under baseline conditions with conversion to type 1 ECG following challenge with a sodium channel blocker, **and**
   B. Conditions causing a Brugada syndrome phenocopy (e.g., myocardial ischemia, electrolyte disturbances, and drug intoxications) have been ruled out, **and**
   C. Any of the following:
      i. Recurrent syncope
      ii. Self-terminating polymorphic ventricular tachycardia
      iii. A family history of sudden cardiac death
      iv. Ventricular fibrillation
      v. Cardiac arrest
2. Genetic testing for Brugada syndrome (BrS) via SCN5A variant analysis is considered investigational for all other indications.
3. Genetic testing for Brugada syndrome (BrS) via genes other than SCN5A, including multigene panel analysis is considered investigational.

Note: If a panel is performed, the appropriate panel code should be used

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Catecholaminergic Polymorphic Ventricular

Catecholaminergic Polymorphic Ventricular Tachycardia Panels

1. Genetic testing for catecholaminergic polymorphic ventricular tachycardia (CPVT) via multigene panel is considered **medically necessary** when:
   A. The member has no known structural cardiac abnormalities, **and**
   B. The member has any of the following:
      i. Syncope occurring during physical activity or acute emotion, **or**
      ii. History of exercise- or emotion-related palpitations and dizziness, **or**

iii. Sudden unexpected cardiac death triggered by acute emotional stress or exercise, **or**
iv. Family history of juvenile sudden cardiac death triggered by exercise or acute emotion, **or**
v. Exercise-induced bidirectional or polymorphic ventricular arrhythmias, **or**
vi. Ventricular fibrillation occurring in the setting of acute stress.

2. Genetic testing for catecholaminergic polymorphic ventricular tachycardia (CPVT) via multigene panel is considered **investigational** for all other indications.

Note: If a panel is performed, the appropriate panel code should be used

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Familial Hypercholesterolemia

Familial Hypercholesterolemia (FH) Panels

1. Genetic testing for familial hypercholesterolemia (FH) via multigene panel to establish or confirm a diagnosis of familial hypercholesterolemia (FH) is considered **medically necessary** when:
   A. The member has at least two or more elevated LDL-C measurements, including assessment after intensive lifestyle modification, **and**
   B. There is no apparent secondary cause of hypercholesterolemia (e.g., hypothyroidism, diabetes, renal disease, nephrotic syndrome, liver disease, medications), **and**
      i. The member is a child with LDL-C levels greater than or equal to 190 mg/dl, **or**
      ii. The member is a child with LDL-C levels greater than or equal to 160 mg/dl with one of the following:
         a) At least one first-degree relative with elevated LDL-C, **or**
         b) At least one first-degree relative with premature CAD, **or**
         c) Limited family history (e.g., adoption), **or**
         d) A family history of both hypercholesterolemia and premature CAD, **or**
      iii. The member is an adult with LDL-C levels greater than or equal to 250 mg/dl, **or**
      iv. The member is an adult with LDL-C greater than or equal to 190 mg/dl with one of the following:
         a) At least one first-degree relative with elevated LDL-C, **or**
         b) At least one first-degree relative with premature CAD, **or**
         c) Limited family history (e.g. adoption), **or**
      v. The member is an adult with LDL-C greater than or equal to 160 mg/dl with one of the following:
         a) A family history of both hypercholesterolemia and premature CAD, **or**
         b) A personal history of premature CAD, **or**
   C. The member is an adult with premature CAD, **and**
      i. A family history of both hypercholesterolemia and premature CAD.

2. Genetic testing for familial hypercholesterolemia (FH) via multigene panel to establish or confirm a diagnosis of familial hypercholesterolemia (FH) is considered **investigational** for all other indications.

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Congenital Heart Malformation

Congenital Heart Malformation Panels

1. Genetic testing for congenital heart malformations via multigene panel analysis may be considered **medically necessary** when:
   A. The member has a complex congenital heart malformation (e.g., hypoplastic left heart, transposition of the great vessels, tetralogy of Fallot, etc.), **and**
   B. The member's clinical features do not fit a known genetic disorder for which targeted testing could be performed (e.g., 22q11.2 deletion syndrome, Down syndrome/Trisomy 21, Williams syndrome, etc.), **and**
   C. Prenatal teratogen exposure has been considered and ruled out when possible.
2. Genetic testing for congenital heart malformations via multigene panel analysis is considered **investigational** all other indications, including "simple" congenital heart defects (e.g., ventricular septal defects, atrial septal defects, patent ductus arteriosus).

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Post Heart Transplant Gene Expression Panels for Rejection Risk via Peripheral Blood

1. The use of post heart transplant gene expression panels for rejection risk via peripheral blood to determine management of patients after heart transplantation is considered medically necessary for members when:
   A. The member has undergone heart transplant and is at low-risk for organ rejection, **and**
   B. The member's heart transplant was performed at least 2 months ago and less than 5 years ago

2. The use of post heart transplant gene expression panels for rejection risk via peripheral blood to determine management of patients after heart transplantation is considered investigational for all indications.

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Heart Transplant Gene Expression Panels for Rejection Risk via Tissue

1. The use of post heart transplant gene expression panels for rejection risk via tissue is considered **investigational**.

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Donor-derived cell-free DNA for Heart Transplant Rejection

1. The use of peripheral blood measurement of donor-derived cell-free DNA in the management of patients after heart transplantation is considered medically necessary when:
   A. The member has undergone a heart transplant **and**
   B. Peripheral blood measurement of donor-derived cell-free DNA testing has not been performed in the past twelve months.
2. The use of peripheral blood measurement of donor-derived cell-free DNA in the management of patients after heart transplantation is considered investigational for all other indications.

Definitions

1. **Close relatives** include first, second, and third degree blood relatives on the same side of the family:
   A. **First-degree relatives** are parents, siblings, and children
   B. **Second-degree relatives** are grandparents, aunts, uncles, nieces, nephews, grandchildren, and half siblings
   C. **Third-degree relatives** are great grandparents, great aunts, great uncles, great grandchildren, and first cousins
2. A **phenocopy** is a trait or disease that resembles the trait expressed by a certain genotype, but in an individual that is not a carrier of that genotype.
3. **Sudden cardiac death (SCD)** is death due to a cardiovascular cause that occurs within one hour of the onset of symptoms.
4. **Sudden unexplained death (Sudden unexplained death syndrome, SUDS)** refers to a sudden cardiac death that occurs in an apparently healthy and often young individual within an hour of the onset of symptoms and for no apparent reason.
5. **Premature coronary artery disease (CAD)** is defined as male subjects at or under 55 years of age, female subjects at or under 65 years of age; adapted from the American Heart Association phenotype definition of HeFH.
6. **Sudden cardiac arrest** is defined as “the sudden cessation of cardiac activity so that the victim becomes unresponsive, with no normal breathing and no signs of circulation. If corrective measures are not taken rapidly, this condition progresses to sudden death. Cardiac arrest should be used to signify an event as described above, that is reversed, usually by CPR and/or defibrillation or cardioversion, or cardiac pacing.”

Products

This information is for most, but not all, HealthPartners plans. Please read your plan documents to see if your plan has limits or will not cover some items. If there is a difference between this general information and your plan documents, your plan documents will be used to determine your coverage. These coverage criteria do not apply to Medicare Products. For more information regarding Medicare coverage criteria or for a copy of a Medicare coverage policy, contact Member Services at 952-883-7272 or 1-877-778-8384.

Approved Medical Director Committee 6/16/21, 4/4/22, 10/3/2022, 3/8/23, 9/26/23, 3/7/24, 9/20/2024 Annual Review: 07/2022, 1/2023, 7/2023, 1/2024, 7/2024, 1/2025

References

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