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Genetic Testing for Hereditary Cardiac Disease and Arrhythmias

Covered Service: Yes—when meets criteria below

Prior Authorization Required: Yes—as shown below

Additional Information: Pre- and post-test genetic counseling is required for any individual undergoing genetic testing for the hereditary cardiomyopathies and arrhythmias.

A first-degree relative is defined as an individual’s parents, full siblings, and children.
A second-degree relative is defined as an individual’s grandparents, grandchildren, aunts, uncles, nephews, nieces and half-siblings.
A third-degree relative is defined as first cousins, great-aunts, great-uncles, great-grandchildren, or great-grandparents.

Prevea360 Health Plan Medical Policy:

1.0 Confirmatory (Diagnostic) Genetic Testing for hereditary arrhythmias and/or cardiomyopathies requires prior authorization through the Quality and Care Management Division and the testing is considered medically necessary when ALL of the following criteria are met:

1.1 Results from testing will alter medical management for the individual being tested (e.g. implantable or wearable cardioverter defibrillator) or will directly impact the medical management of a blood relative who is covered under the same plan; and

1.2 The individual has a suspected or confirmed clinical diagnosis of a specific hereditary cardiomyopathy and/or arrhythmia; and

1.3 The requested testing is targeted to a specific subset of genes related to the disease specific condition (e.g. hypertrophic cardiomyopathy (HCM) or arrhythmogenic right ventricular cardiomyopathy/dysplasia).

2.0 Dilated Cardiomyopathy (DCM) genetic testing requires prior authorization and is considered medically necessary in an individual when ALL of the following conditions are met:

2.1 Individual has a clinical diagnosis of DCM; and

2.2 Individual has significant cardiac conduction disorder (first, second-, or third-degree block) and/or a family history of premature cardiac death (<50 years of age) in one or more 1st- or 2nd degree relative.
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3.0 **Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (ARVD/C)** genetic testing requires prior authorization and is considered medically necessary for the following indications:

3.1 Individual with ARVD/C symptoms who would meet ITF diagnostic criteria if a genetic mutation were identified; or

3.2 Probands with ARVD International Task Force (ITF) – confirmed ARVD/C with at-risk relatives

4.0 **Brugada Syndrome (BrS)** genetic testing requires prior authorization and is considered medically necessary when the following are present:

4.1 Confirmation of diagnosis in patient with unclear ECG findings, when family history or other clinical findings are insufficient; or

4.2 Probands with confirmed Brugada syndrome with at-risk relatives.

5.0 **Testing of Unaffected Individuals**: Single-site genetic testing for a known familial mutation requires prior authorization and is medically necessary for at risk-asymptomatic or for predictive testing in a first-degree relative when the individual meets general criteria for hereditary genetic testing in (1.1 and 1.3) for the following indications:

5.1 Hypertrophic Cardiomyopathy (HCM)

5.2 Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)

5.3 Dilated Cardiomyopathy (DCM)

5.4 Brugada syndrome (BrS)

5.5 Arrhythmogenic right ventricular cardiomyopathy/dysplasia (ARVC/D)

5.6 Left ventricular non-compaction cardiomyopathy (LVNC)

5.7 Restrictive cardiomyopathy (RCM)

6.0 **Long QT Syndrome (LQTS)** genetic testing requires prior authorization and is medically necessary when the individual meets general criteria for hereditary cardiac genetic testing (1.0) and has either of the following indications:

6.1 Confirmatory (i.e., diagnostic) testing when there is confirmed prolonged QT interval on electrocardiogram (ECG) or Holter monitor (i.e. corrected QT interval of 470 msec or more (males) or 480 msec or more (females), and an acquired cause has been ruled; or

6.2 Predictive testing, when there is evidence in a first- or second-degree relative of any of the following:

6.2.1 A history of prolonged QT interval on ECG or Holter monitor (i.e., corrected QT interval of 470 msec or more (males) or 480 msec or more (females) and the affected individual is not available for testing; or

6.2.2 Sudden death of suspected cardiac diagnosis or near sudden death at age 40 or younger with no evidence of ischemia and no genetic testing was performed; or
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6.2.3 Predictive testing for the known familial sequence variant when there is a positive genetic test for LQTS.

7.0 **Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)** genetic testing **requires prior authorization** and is considered medically necessary for the following indication:

7.1 Persons who display exercise, catecholamine-, or emotion-induced PVT or ventricular fibrillation, occurring in a structurally normal heart.

8.0 **Non-Covered Tests**: The following genetic tests are considered not medically necessary, and therefore, are not a covered service:

8.1 Broad “multi-condition” panel testing (e.g., pan-cardio panel, arrhythmia panel) are experimental/investigational.

8.2 Genetic testing for Short QT syndrome and atrial fibrillation is experimental/investigational.

8.3 Genetic testing for hereditary cardiac conditions in the general population is considered not medically necessary and therefore not covered.

8.3.1 Coronary Artery Disease Genetic Panel
8.3.2 Coronary Artery Disease 9p21 Allele
8.3.3 Coronary Artery Disease Gene Expression Testing
8.3.4 Coronary Artery Disease KIF6 Gene
8.3.5 MicroRNA Detection Heart Failure

9.0 All other indications not listed above are considered experimental/investigational.
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**CPT/HCPCS Codes Related to MP9472**

*Codes on Medical Policy documents are included only as a general reference tool for each policy. This list may not be all-inclusive.*

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>81403</td>
<td>Molecular Pathology Procedure Level 4</td>
</tr>
<tr>
<td>81404</td>
<td>Molecular Pathology Procedure Level 5</td>
</tr>
<tr>
<td>81405</td>
<td>Molecular Pathology Procedure Level 6</td>
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<td>81406</td>
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<tr>
<td>81407</td>
<td>Molecular Pathology Procedure Level 8</td>
</tr>
<tr>
<td>81408</td>
<td>Molecular Pathology Procedure Level 9</td>
</tr>
<tr>
<td>81413</td>
<td>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</td>
</tr>
<tr>
<td>81414</td>
<td>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</td>
</tr>
<tr>
<td>81439</td>
<td>Inherited cardiomyopathy (e.g., hypertrophic cardiomyopathy, dilated cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy) genomic sequence analysis panel, must include sequencing of at least 5 genes, including DSG2, MYBPC3, MYH7, PKP2, and TTN</td>
</tr>
<tr>
<td>81479</td>
<td>Unlisted molecular pathology procedure</td>
</tr>
<tr>
<td>81493</td>
<td>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</td>
</tr>
<tr>
<td>81599</td>
<td>Unlisted multianalyte assay with algorithmic analysis</td>
</tr>
<tr>
<td>S3861</td>
<td>Genetic testing, sodium channel, voltage-gated, type V, alpha subunit (SCN5A) and variants for suspected Brugada Syndrome</td>
</tr>
<tr>
<td>S3865</td>
<td>Comprehensive gene sequence analysis for hypertrophic cardiomyopathy</td>
</tr>
<tr>
<td>S3866</td>
<td>Genetic analysis for a specific gene mutation for hypertrophic cardiomyopathy (HCM) in an individual with a known HCM mutation in the family</td>
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</table>
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Committee/Source  Date(s)
Originated: Medical Policy Committee/Quality and Care Management Division  April 3, 2017

Revised:

Reviewed:

Published/Effective: 07/01/2017