IMPORTANT REMINDER

Medical Policies are developed to provide guidance for members and providers regarding coverage in accordance with contract terms. Benefit determinations are based in all cases on the applicable contract language. To the extent there may be any conflict between the Medical Policy and contract language, the contract language takes precedence.

PLEASE NOTE: Contracts exclude from coverage, among other things, services or procedures that are considered investigational or cosmetic. Providers may bill members for services or procedures that are considered investigational or cosmetic. Providers are encouraged to inform members before rendering such services that the members are likely to be financially responsible for the cost of these services.

DESCRIPTION

Genetic testing, which detects changes in DNA, RNA, and chromosomes, may be performed to diagnose or determine susceptibility to inherited conditions, screen for potential genetic risk factors for common conditions, and aid in the selection of medications or other treatments.

MEDICAL POLICY CRITERIA

The following general criteria are applied to genetic and molecular diagnostic testing.

I Genetic Testing for Inherited Diseases

A Genetic testing to establish a diagnosis or susceptibility for an inherited disease may be medically necessary when all of the following criteria are met:

1. There must be a reasonable expectation based on family history (pedigree analysis), risk factors, and symptomatology that a genetically inherited condition exists.

2. Diagnostic results from physical examination, pedigree analysis, and conventional testing are inconclusive and a definitive diagnosis is uncertain.
3. The clinical utility of all requested genes and gene mutations must be established (including all genes and gene mutations in a panel test, as applicable). The clinical records must document:
   a. How test results will guide decisions regarding: disease treatment, prevention, or management, such as averting treatment for other possible diagnoses, AND
   b. These treatment decisions would not otherwise be made in the absence of the genetic test results.

B Genetic testing to establish a diagnosis or susceptibility for an inherited disease is considered **not medically necessary** if any of criteria I.A.1- I.A.3.b above are not met.

C Genetic testing of children to predict adult onset diseases is considered **not medically necessary** unless test results will guide current decisions concerning prevention and this benefit would be lost by waiting until the child has reached adulthood.

II Genetic Testing Not Related to Inherited Conditions

Genetic testing for indications *other than* determining risk or establishing a diagnosis for a genetically inherited disease (e.g., genotyping for drug selection and dosing) may be considered **medically necessary** when *all* of the following criteria are met:

A Diagnostic results from physical examination and conventional testing are inconclusive; and

B The clinical records document how results of genetic testing are necessary to guide treatment decisions; and

C There is reliable evidence in the peer-reviewed scientific literature that health outcomes are improved as a result of treatment decisions based on molecular genetic test results.

### POLICY GUIDELINES

In order to determine the clinical utility of gene test(s), **all of the following information must be submitted for review:**

1. Name of the genetic test(s) or panel test
2. Name of the performing laboratory and/or genetic testing organization (more than one may be listed)
3. The exact gene(s) and/or mutations being tested
4. Relevant billing codes
5. Brief description of how the genetic test results will guide clinical decisions that would not otherwise be made in the absence of testing
6. Medical records related to this genetic test
   - History and physical exam
   - Conventional testing and outcomes
Conservative treatment provided, if any

CROSS REFERENCES

1. See the Genetic Testing Section of the Medical Policy Manual Table of Contents for additional genetic testing policies.

BACKGROUND

GENETIC TESTING

Genetic testing may be performed for several different purposes, including:

- Diagnosing or predicting susceptibility for inherited conditions[1]
- Screening for common disorders
- Selecting appropriate treatments (also known as pharmacogenetic testing)

GENETIC PANEL TESTING

New genetic technology, such as next generation sequencing and chromosomal microarray, has led to the ability to examine many genes simultaneously.[2] This in turn has resulted in a proliferation of genetic panels. Panels using next generation technology are intuitively attractive to use in clinical care because they can screen for numerous mutations within a single or multiple genes quickly, and may lead to greater efficiency in the work-up of genetic disorders. One potential challenge of genetic panel testing is the identification of genetic variants of unknown significance and mutations for which the clinical management is uncertain and may lead to unnecessary follow-up testing and procedures.

GENETIC COUNSELING

Due to the complexity of interpreting genetic test results, patients should receive pre- and post-test genetic counseling from a qualified professional when testing is performed to diagnose or predict susceptibility for inherited diseases. The benefits and risks of genetic testing should be fully disclosed to individuals prior to testing, and counseling concerning the test results should be provided.

REGULATORY STATUS

The majority of genetic tests and genetic panel tests are laboratory derived tests that are not subject to U.S. Food and Drug Administration (FDA) approval. The degree of oversight by the FDA depends on the intended use of the test and risk of inaccurate results.[3] Clinical laboratories may develop and validate tests in-house (“home-brew”) and market them as a laboratory service; such tests must meet the general regulatory standards of the Clinical Laboratory Improvement Act (CLIA). The laboratory offering the service must be licensed by CLIA for high-complexity testing.
Note: Separate Medical Policies may apply to some specific genetic tests and panels. See the Genetic Testing Section of the Medical Policy Manual Table of Contents for additional genetic testing policies.

REFERENCES


CODES

If the specific analyte (gene or gene mutation) is listed with a CPT code, the specific CPT code should be reported. If the specific analyte is not listed with a specific CPT code, unlisted code 81479 should be reported.

<table>
<thead>
<tr>
<th>Codes</th>
<th>Number</th>
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<tr>
<td>CPT</td>
<td>81162</td>
<td>BRCA1, BRCA2 (breast cancer 1 and 2) (eg, hereditary breast and ovarian cancer) gene analysis; full sequence analysis and full duplication/deletion analysis</td>
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<td>81170</td>
<td>ABL1 (ABL proto-oncogene 1, non-receptor tyrosine kinase) (eg, acquired imatinib tyrosine kinase inhibitor resistance), gene analysis, variants in the kinase domain</td>
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<td>HCPCS</td>
<td>G0452</td>
<td>Molecular pathology procedure; physician interpretation and report</td>
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<tr>
<td></td>
<td>S3800</td>
<td>Genetic testing for amyotrophic lateral sclerosis (ALS)</td>
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<td>S3840</td>
<td>DNA analysis for germline mutations of the RET proto-oncogene for susceptibility to multiple endocrine neoplasia type 2</td>
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<td>S3841</td>
<td>Genetic testing for retinoblastoma</td>
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<td>Genetic testing for Von Hippel-Lindau disease</td>
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<td>DNA analysis of the connexin 26 gene (GJB2) for susceptibility to congenital, profound deafness</td>
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<td>Genetic testing for alpha thalassemia</td>
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<td>Genetic testing for Niemann-Pick disease</td>
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<td>Genetic testing, sodium channel, voltage-gated, type V, alpha subunit (SCN5A) and variants for suspected Brugada syndrome</td>
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<td>S3865</td>
<td>Comprehensive gene sequence analysis for hypertrophic cardiomyopathy</td>
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<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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*Date of Origin: September 1999*