

Policy: MP314

Section: Medical Benefit Policy

Subject: Molecular Testing – General Guidelines

Applicable Lines of Business

Commercial	X	CHIP	X
Medicare	X	ACA	X
Medicaid	X		

I. Policy: Molecular Testing – General Guidelines

II. Purpose/Objective:

To provide a policy of coverage regarding Molecular Testing – General Guidelines

III. Responsibility:

- A. Medical Directors
- B. Medical Management

IV. Required Definitions

1. Attachment – a supporting document that is developed and maintained by the policy writer or department requiring/authoring the policy.
2. Exhibit – a supporting document developed and maintained in a department other than the department requiring/authoring the policy.
3. Devised – the date the policy was implemented.
4. Revised – the date of every revision to the policy, including typographical and grammatical changes.
5. Reviewed – the date documenting the annual review if the policy has no revisions necessary.

V. Additional Definitions

Medical Necessity or Medically Necessary means Covered Services rendered by a Health Care Provider that the Plan determines are:

- a. appropriate for the symptoms and diagnosis or treatment of the Member's condition, illness, disease or injury;
- b. provided for the diagnosis, and the direct care and treatment of the Member's condition, illness disease or injury;
- c. in accordance with current standards of good medical treatment practiced by the general medical community.
- d. not primarily for the convenience of the Member, or the Member's Health Care Provider; and
- e. the most appropriate source or level of service that can safely be provided to the Member. When applied to hospitalization, this further means that the Member requires acute care as an inpatient due to the nature of the services rendered or the Member's condition, and the Member cannot receive safe or adequate care as an outpatient.

Medicaid Business Segment

Medically Necessary — A service, item, procedure, or level of care that is necessary for the proper treatment or management of an illness, injury, or disability is one that:

- Will, or is reasonably expected to, prevent the onset of an illness, condition, injury or disability.
- Will, or is reasonably expected to, reduce or ameliorate the physical, mental or developmental effects of an

illness, condition, injury or disability.

- Will assist the Member to achieve or maintain maximum functional capacity in performing daily activities, taking into account both the functional capacity of the Member and those functional capacities that are appropriate for Members of the same age.

DESCRIPTION: Molecular tests are specialized laboratory studies that evaluate human DNA, RNA, chromosomes, and/or the presence or absence of proteins whose production is mediated by specific genes. The clinical utility may be in diagnosing or predicting susceptibility of inherited conditions and disorders and in selecting appropriate treatment or monitoring response to treatment. Testing can be limited to single gene variants or across multiple genes. Next generation sequencing, chromosomal microarray, exome and genome testing has led to the ability to examine many genes simultaneously. When appropriate, panel tests can screen for numerous variants within a single gene or multiple genes more efficiently in the diagnostic work-up of genetic disorders. One potential challenge is the identification of genetic variants of unknown clinical significance and/or variants for which the clinical management is uncertain.

Molecular testing is divided into the following categories:

Diagnostic testing (cancer): Genetic testing for the purposes of confirming the presence or absence of cancer, and may contribute information to guide prognosis and treatment options. After treatment, active monitoring is often recommended to identify if the cancer is responding to treatment, has recurred or metastasized. Specific policies may apply. See also: [Genetic Testing for BRCA1/2](#); [Genetic Testing Related to Colorectal Cancer](#); [Gene Expression Profiling for Breast Cancer](#); [Advanced Molecular Topographic Genotyping](#); [Single Nucleotide Polymorphisms \(SNPs\) to Predict Risk of Non-Familial Breast Cancer](#); [Microarray Gene Expression Testing for Cancer of Unknown Origin](#); [Circulating Tumor Cells](#); [Molecular Markers to Predict Thyroid FNA](#); [Morphometric Tumor Analysis](#); [Multi-gene Expression Assay for Predicting Recurrence in Colon Cancer](#); [PCA3 and Gene Expression Assays for Prostate Cancer](#); [Prolaris® Post-Prostatectomy Test](#); [Proteomic Serum Analysis, Molecular Profiling of Malignant Tumors to Identify Targeted Therapies](#); [Genetic Testing Hereditary Cancer Panel](#), [Plasma-based Proteomic Testing in the Management of Pulmonary Nodules](#); [Predictive Classifiers for Early Stage Non-Small Cell Lung Cancer](#) ; [Minimal Residual Disease Testing](#)

Prenatal testing: Genetic testing for the purposes of prenatal screening is performed to identify fetuses with higher probabilities of a genetic syndrome, such as an aneuploidy. Non-invasive prenatal screening (NIPS) often utilizes chromosome fragment counting technology, and some laboratories will increase diagnostic sensitivity through SNP-based assays. Other prenatal tests, such as first-trimester screening, evaluate metabolites produced by the pregnancy for to screen for specific genetic disorders. See also: [Non-Invasive Testing for Fetal Aneuploidy and Microdeletions](#); [Comparative Genomic Hybridization](#);

Diagnostic testing (non-cancer): identifies, confirms or rules out specific conditions of chromosomal or genetic etiology. Specific policies may apply. See also: [HPV DNA Testing](#); [Janus Kinase 2 Gene Mutation Analysis](#); [Gene Expression Testing to Predict Coronary Artery Disease](#); [Genetic Testing For Inherited Thrombophilia/ Hypercoagulability](#); [Genetic Testing for Familial Hypercholesterolemia](#); [Whole Exome Sequencing](#); [Genetic Testing For Inherited Thrombophilia/ Hypercoagulability](#), [Genetic and Biochemical Testing for Alzheimer's Disease and Dementia](#); [Genetic Testing for Mitochondrial Disorders](#)

Carrier testing: Genetic testing for the purposes of carrier screening is performed to identify genetic risk that may impact reproductive decision-making. Individuals identified as being “carriers” are typically not affected by the condition but have an increased risk of having a child with a genetic condition. Genetic testing for carrier screening may be available for autosomal recessive genetic conditions, X chromosome-linked conditions, and certain other chromosomal abnormalities.

Prenatal testing: detects abnormalities in a fetus’s genes or chromosomes that will result in a genetic mediated condition. Results of testing are used to guide reproductive decision-making, pregnancy management and anticipated management of the infant at birth. See also: [Genetic Testing for Non-Cancer Heritable Disease Carrier Status](#); [Genetic Testing Hereditary Cancer Panel](#)

Predictive or pre-symptomatic testing: detects genetic abnormalities that manifest in conditions later in life. Genetic test results may impact medical management through heightened screening strategies, preventive measures, and/or prophylactic medication. For newborn testing, state mandates apply. Specific policies may apply. See also: [Non-invasive Testing for Heart Transplant Rejection](#); [Genetic Testing for Macular Degeneration](#); [Multi-cancer Early Detection Testing \(MCED\)](#)

Pharmacogenetic testing: used to select appropriate treatments based on an individual’s likelihood of response or non-response, or risk of toxicity to a particular drug or therapy. Specific policies may apply. See also: [Chemosensitivity and Chemoresistance Assays](#); [Pharmacogenetic Testing](#); [Genotyping or Phenotyping for Thiopurine Methyltransferase](#)

COVERAGE STATEMENT

Eligibility and contract specific benefit limitations and/or exclusions will apply. Coverage statements found in the line of business specific benefit document will supersede this policy.

If coverage for genetic testing is available, specific criteria for genetic testing may be outlined in one of the related medical policies listed. If a separate policy does not exist and there is no benefit restriction, the following basic criteria apply:

In the absence of a specific policy the Plan will utilize the available peer-reviewed medical literature, independent technology assessment reports, and/or review by the Geisinger Technology Assessment Committee to evaluate the following criteria when assessing the validity and efficacy of specific genetic tests:

- The analytic validity of a test as determined by its accuracy, sensitivity and specificity to the genotype of interest
- The clinical validity of the test and its ability to confirm a diagnosis when conventional work-up is equivocal
- The clinical utility of the test measured by the degree of influence to alter the management of the individual's care plan
- The net health outcome benefit of the test as compared to established alternatives if applicable, and the information gained is not significantly offset by physical risk, social or ethical challenges.

LIMITATIONS:

Genetic testing holds great potential, it also has many limitations. Genetic tests may reveal if a mutation exists, and may predict the likelihood of developing a particular disease, but it cannot always guarantee that the disease will develop, nor can it predict how severely the disease will manifest in the individual carrying the mutation. Many genetic tests cannot detect all mutations that can cause disease, therefore while a positive result can be informative; a negative result is not always conclusive.

Coverage for genetic testing is limited to members at risk for disease or for managing a known disease.

For those reasons, genetic testing is appropriate only when offered in a setting where a licensed or certified genetic counselor* or adequately trained health care professional is able to provide appropriate pre- and post-test genetic counseling, and medical necessity is supported by ALL of the following criteria:

1. The information is needed to adequately assess risk in the member; and
2. The information will be used in the immediate care plan of the member; and
3. Pedigree analysis establishes that the insured individual is in a high-risk group for the disease; or
4. Clinical presentation of symptomology is evident and diagnosis cannot be established with conventional evaluation testing.

*A genetic counselor is considered by the Plan to be qualified if the following are met:

- M.S. or Ph.D. degree from a genetic counseling program approved/ certified by the American Board of Genetic Counseling or the American Board of Medical Genetics;
or
- Board certified or board qualified/eligible in the orderly process of obtaining board certification by the American Board of Genetic Counseling or American Board of Medical Genetics;
and
- Proof of current competence and demonstrated ability (minimum of two years recent and continual experience within the past three years).

EXCLUSIONS:

- Genetic tests that do not meet the evaluation criteria for assessing the validity and efficacy are **NOT COVERED**.
- Genetic tests for conditions which cannot be altered by treatment or prevented by interventions are **NOT COVERED**.
- Genetic testing as a general population screening tool is **NOT COVERED**.
- Multiplex carrier screening tests designed to identify multiple genetic diseases in a single test are **NOT COVERED**.
- Testing of non-covered family members is **NOT COVERED**.
- Genetic tests that provide information that cannot reasonably be expected to elicit a change in the individual's plan of care are **NOT COVERED**.
- Genetic testing to determine paternity or to determine the sex of an unborn child is **NOT COVERED**.
- Direct-to-consumer genetic testing with self-administered at-home testing kits, with or without physician prescription or verbal recommendation is **NOT COVERED**.
- Direct-to-consumer testing in healthy persons interested in knowing if their genetic complement puts them at risk for disease is **NOT COVERED**.

Note: A complete description of the process by which a given technology or service is evaluated and determined to be experimental, investigational or unproven is outlined in MP 15 - Experimental Investigational or Unproven Services or Treatment.

Medicaid Business Segment:

Any requests for services, that do not meet criteria set in the PARP, may be evaluated on a case by case basis

LINE OF BUSINESS:

Eligibility and contract specific benefits, limitations and/or exclusions will apply. Coverage statements found in the line of business specific benefit document will supersede this policy. For Medicare, applicable LCD's and NCD's will supercede this policy. For PA Medicaid Business segment, this policy applies as written.

REFERENCES:

Clinical utility of genetic and genomic services: a position statement of the American College of Medical Genetics and Genomics. Genet Med. Jun 2015;17(6):505-507.

Whittaker L. Clinical applications of genetic testing: Implications for the family physician. Am Fam Physician. 1996;53(6):2077-2084.

Teutsch SM, Bradley LA, Palomaki GE, et al. The Evaluation of Genomic Applications in Practice and Prevention (EGAPP) Initiative: methods of the EGAPP Working Group. Genet Med. Jan 2009;11(1):3-14.

Pennsylvania Department of Human Services. Technology Assessment Group Coverage Decisions. Managed Care Operations. Memorandum: OPS # 12/2013-14.

Goldefeder RL, Priest JR, Zook JM, Grove ME et al. Medical implications of technical accuracy in genome sequencing. Genome Medicine (2016) 8:24

Agency for Healthcare Research and Quality (AHRQ). Technology Assessment of Molecular Pathology Testing for the Estimation of Prognosis for Common Cancers. May 2014

Deverka P, Messner DA, et al. Generating and evaluating evidence of the clinical utility of molecular diagnostic tests in oncology. Genet Med 2016;18, 780–787.

Centers for Disease Control. Office of Public Health Genomics. ACCE Model Process for Evaluating Genetic Tests

This policy will be revised as necessary and reviewed no less than annually.

Devised: 5/18

Revised: 5/19 (added policy titles); 5/20 (add policy titles); 5/21 (add policy titles), 5/22 (add policy titles); 5/23 (add policy titles); 5/24 (add general information)

Reviewed:

CMS UM Oversight Committee Approval: 12/23

Geisinger Health Plan may refer collectively to health care coverage sponsors Geisinger Health Plan, Geisinger Quality Options, Inc., and Geisinger Indemnity Insurance Company, unless otherwise noted. Geisinger Health Plan is part of Geisinger, an integrated health care delivery and coverage organization.

Coverage for experimental or investigational treatments, services and procedures is specifically excluded under the member's certificate with Geisinger Health Plan. Unproven services outside of an approved clinical trial are also specifically excluded under the member's certificate with Geisinger Health Plan. This policy does not expand coverage to services or items specifically excluded from coverage in the member's certificate with Geisinger Health Plan. Additional information can be found in MP015 Experimental, Investigational or Unproven Services.

Prior authorization and/or pre-certification requirements for services or items may apply. Pre-certification lists may be found in the member's contract specific benefit document. Prior authorization requirements can be found at <https://www.geisinger.org/health-plan/providers/ghp-clinical-policies>

Please be advised that the use of the logos, service marks or names of Geisinger Health Plan, Geisinger Quality Options, Inc. and Geisinger Indemnity Insurance Company on a marketing, press releases or any communication piece regarding the contents of this medical policy is strictly prohibited without the prior written consent of Geisinger Health Plan. Additionally, the above medical policy does not confer any endorsement by Geisinger Health Plan, Geisinger Quality Options, Inc. and Geisinger Indemnity Insurance Company regarding the medical service, medical device or medical lab test described under this medical policy.