Sentara Health Plans

Medicaid

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Genetic Testing—Pre-Treatment or Post-Intervention

Table of Content

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Coverage Policy	Medical 34B
Version	1

All requests for authorization for the services described by this medical policy will be reviewed per Early and Periodic Screening, Diagnostic and Treatment (EPSDT) guidelines. These services may be authorized under individual consideration for Medicaid members under the age of 21-years if the services are judged to by medically necessary to correct or ameliorate the member's condition. Department of Medical Assistance Services (DMAS), Supplement B - EPSDT (Early and Periodic Screening, Diagnosis and Treatment) Manual.*.

Purpose:

This policy addresses the genetic testing for the prevention diagnosis and treatment of various conditions.

Description & Definitions:

Autosomal recessive: A genetic condition that appears only in individuals who have received two copies of an autosomal gene, one copy from each parent. The gene is on an autosome, a nonsex chromosome. The parents are carriers who have only one copy of the gene and do not exhibit the trait because the gene is recessive to its normal counterpart gene

X-linked recessive inheritance: A hereditary pattern in which a recessive gene on the X chromosome results in the manifestation of characteristics in male offspring and a carrier state in female offspring.

Criteria:

Genetic Testing is considered **medically necessary** for the prevention diagnosis and treatment of patients who meet **All** of the following:

- There is an approved mutation specific treatment available
- There is sufficient Published Scientific Evidence or 3rd party Consensus in the Medical Community that the results of the specific genetic testing improves clinical outcomes

- After completion of a thorough history, physical examination, pedigree analysis, genetic counseling, relevant diagnostic and biochemical tests (if any), the patient meets criteria for **1 or more** of the following approved tests:
    - **HPV DNA** is covered without criteria

- **Factor V Leiden** is covered without criteria.
- **Prothrombin/Factor II Gene Mutation Analysis** is covered without criteria.
- **PCR (Polymerase Chain Reaction) Testing for Hepatitis C or B** is covered without criteria or Pre-Authorization. – May also be addressed by Avalon
- **Thiopurine S-Methyltransferase (TPMT)** is covered without criteria.
- **Fabry Disease** is medical necessary for individual genetic female on a case by case basis and requires Medical Director approval.
- **Hemophilia A (Factor VIII) or Hemophilia B (Factor IX)** is covered when **All** of the following are met:
  - The individual displays clinical features, or is at direct risk of inheritance;
  - The result of the test will directly impact the treatment being delivered to the individual
  - After history, physical examination, and completion of conventional diagnostic studies (e.g. Factor VIII, Factor IX levels), a definitive diagnosis remains uncertain
- **Aplastic Anemia (FISH) fluorescence in situ hybridization** is covered without criteria.
- **HLA-B27** is medically necessary when used to rule out autoimmune disorders.
- **Hereditary Hemochromatosis -** HFE gene testing may be indicated when **ALL** of the following are present: (81256)
  - Diagnosis or screening of HFE-hereditary hemochromatosis, as indicated by **1 or more** of the following
    - Confirmation of diagnosis in adult with clinical suspicion of HFE-related hemochromatosis, as indicated by **1 or more** of the following:
      - Transferrin-iron saturation higher than 45%
      - Serum ferritin above upper limit of normal, and other more common causes of elevated ferritin (eg, acute inflammation, alcohol abuse, metabolic syndrome) have been evaluated with inconclusive results
      - Unexplained chronic liver disease combined with increased transferrin saturation
      - Porphyria cutanea tarda
      - Chondrocalcinosis
      - Hepatocellular carcinoma
      - Late-onset type 1 diabetes;
    - Screening of siblings or parents of individual homozygous for C282Y mutation
    - Screening of reproductive partner of individual with HFE- related hemochromatosis
  - Testing is accompanied by genetic counseling
- **HLA haplotype testing to detect genes specific to Celiac disease** are considered medically necessary for patients suspected of having the disease but who have indeterminate serology and/or inconclusive biopsy results (examples include Prometheus HLA-DQA1, HLA-DQB1, HLA-DQ2, HLA-DQ8 testing) are covered without medical review.
- **Severe Combined Immunodeficiency (SCID) Genetic Testing** for individuals with inconclusive screening results from an immune function test or T cell and B cell counts considered eligible for transplant to confirm diagnosis.
- **HLA-A29 Uveitis - HLA I TYPING ALLELE HR** screening will be paid upon request when ordered to rule out or confirm Birdshot chorioretinopathy (BSCR), a rare form of autoimmune posterior uveitis that affects visual function that if left untreated can lead to sight-threatening complications and loss of central vision

The following testing are considered **not medically necessary** for any use other than those indication in the clinical criteria, to include but not limited to:

- Acute Porphyria: HMBS, CPOX, PPOX genes
- Alport gene testing; (COL4A3 and COL4A4)
- Atypical Hemolytic Uremic Syndrome Complement Panel
- Autoimmune lymphoproliferative syndrome ALPS and FAS gene testing ;
- BetaGlobin analysis;
- BIRC4 test is testing for X-linked lymphoproliferative syndrome (XLP), caused by alterations, also known as “mutations," at a specific area within an individual’s genetic information.
- CLCN1 DNA Sequencing Test for Myotonia congenital;
- Charcot Marie Tooth is not medically necessary;
- deCODE T2™, is not medically necessary

- deCODE Glaucoma test, is not medically necessary
- Idiopathic Hypercalcemia of Infancy (CYP24A1 gene)
- IFNL3 & INFNL4 Gene Analysis Associated with Hepatitis C Virus Clearance **(81400)**
- Kennedy's disease (KD) or X-linked spinal and bulbar muscular atrophy (SBMA) or spinobulbar muscular atrophy or X-Linked bulbo-spinal atrophy.
- Lactose intolerance (Prometheus Lab LactoType);
- MaculaRisk PGx
- MTHFR (5,10-methylenetetrahydrofolate reductase) (eg, hereditary hypercoagulability) gene analysis, common variants (eg, 677T, 1298C) (**81291**)
- Narcolepsy gene testing DRB1*15, DQA1*0102, and DQB1*0602
- Porphyria cutanea tarda: UROD gene
- PROMETHEUS Crohn's Prognostic **(81599)**
- PROMETHEUS IBD sgi Diagnostic
- Prometheus Thiopurine Metabolites
- Proove Narcotic Risk, Drug Metabolism and Pain Perception Profiles **(81225, 81226, 81227)**
- Repeat/Duplicative genetic testing
- Transforming Growth Factor Beta-Induced (TGFBI) **(81333)**
- Whole Exome Sequencing (**WES**) all indications,
- Exome Sequence Analysis (**81415, 81416, 81417**)
- Whole-genome sequencing in which a member's entire DNA is sequenced,
- Genome Sequence Analysis (**81425, 81426, 81427**)

Coding:

Medically necessary with criteria:

Coding	Description
81240	F2 (prothrombin, coagulation factor II) (eg, hereditary hypercoagulability) gene analysis, 20210G>A variant
81241	F5 (coagulation factor V) (eg, hereditary hypercoagulability) gene analysis, Leiden variant
81256	HFE (hemochromatosis) (eg, hereditary hemochromatosis) gene analysis, common variants (eg, C282Y, H63D)
81381	HLA Class I typing, high resolution (ie, alleles or allele groups); one allele or allele group (eg, B*57:01P), each
81383	HLA Class II typing, high resolution (ie, alleles or allele groups); one allele or allele group (eg, HLA-DQB1*06:02P), each
81400	Molecular pathology procedure, Level 1 (eg, identification of single germline variant [eg, SNP] by techniques such as restriction enzyme digestion or melt curve analysis)
81404	Molecular pathology procedure, Level 5 (eg, analysis of 2-5 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of 6-10 exons, or characterization of a dynamic mutation disorder/triplet repeat by Southern blot analysis)
81479	Unlisted molecular pathology procedure
85245	Clotting; factor VIII, VW factor, ristocetin cofactor
85246	Clotting; factor VIII, VW factor antigen
85247	Clotting; factor VIII, von Willebrand factor, multimetric analysis
85250	Clotting; factor IX (PTC or Christmas)
81238	F9 (coagulation factor IX) (eg, hemophilia B), full gene sequence

81599	Unlisted multianalyte assay with algorithmic analysis

Considered Not Medically Necessary:

Coding	Description
81225	CYP2C19 (cytochrome P450, family 2, subfamily C, polypeptide 19) (eg, drug metabolism), gene analysis, common variants (eg, *2, *3, *4, *8, *17)
81226	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (eg, drug metabolism), gene analysis, common variants (eg, *2, *3, *4, *5, *6, *9, *10, *17, *19, *29, *35, *41, *1XN, *2XN, *4XN)
81227	CYP2C9 (cytochrome P450, family 2, subfamily C, polypeptide 9) (eg, drug metabolism), gene analysis, common variants (eg, *2, *3, *5, *6)
81291	MTHFR (5,10-methylenetetrahydrofolate reductase) (eg, hereditary hypercoagulability) gene analysis, common variants (eg, 677T, 1298C)
81333	TGFBI (transforming growth factor beta-induced) (eg, corneal dystrophy) gene analysis, common variants (eg, R124H, R124C, R124L, R555W, R555Q)
81415	Exome (eg, unexplained constitutional or heritable disorder or syndrome); sequence analysis
81416	Exome (eg, unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator exome (eg, parents, siblings) (List separately in addition to code for primary procedure)
81417	Exome (eg, unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained exome sequence (eg, updated knowledge or unrelated condition/syndrome
81425	Genome (eg, unexplained constitutional or heritable disorder or syndrome); sequence analysis
81426	Genome (eg, unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator genome (eg, parents, siblings) (List separately in addition to code for primary procedure
81427	Genome (eg, unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained genome sequence (eg, updated knowledge or unrelated condition/syndrome

Document History:

Revised Dates:

- 2022: February
- 2020: December
- 2020: October
- 2019: February
- 2019: January
- 2018: June
- 2017: June
- 2016: August
- 2016: July
- 2016: May
- 2016: April
- 2015: December
- 2015: November
- 2015: October
- 2015: August
- 2015: July
- 2015: April
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References:

Including but not limited to: Specialty Association Guidelines; Government Regulations; Winifred S. Hayes, Inc; UpToDate; Literature Review; Specialty Advisors; National Coverage Determination (NCD); Local Coverage Determination (LCD).

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Special Notes: *

This medical policy express Sentara Health Plan's determination of medically necessity of services, and they are based upon a review of currently available clinical information. These policies are used when no specific guidelines for coverage are provided by the Department of Medical Assistance Services of Virginia (DMAS). Medical Policies may be superseded by state Medicaid Plan guidelines. Medical policies are not a substitute for clinical judgment or for any prior authorization requirements of the health plan. These policies are not an explanation of benefits.

Medical policies can be highly technical and complex and are provided here for informational purposes. These medical policies are intended for use by health care professionals. The medical policies do not constitute medical advice or medical care. Treating health care professionals are solely responsible for diagnosis, treatment and medical advice. Sentara Health Plan members should discuss the information in the medical policies with their treating health care professionals. Medical technology is constantly evolving and these medical policies are subject to change without notice,

although Sentara Health Plan will notify providers as required in advance of changes that could have a negative impact on benefits.

The Early and Periodic Screening, Diagnostic and Treatment (EPSDT) covers services, products, or procedures for children, if those items are determined to be medically necessary to "correct or ameliorate" (make better) a defect, physical or mental illness, or condition (health problem) identified through routine medical screening or examination, regardless of whether coverage for the same service or support is an optional or limited service under the state plan. Children enrolled in the FAMIS Program are not eligible for all EPSDT treatment services. All requests for authorization for the services described by this medical policy will be reviewed per EPSDT guidelines. These services may be authorized under individual consideration for Medicaid members under the age of 21-years if the services are judged to by medically necessary to correct or ameliorate the member's condition. *Department of Medical Assistance Services (DMAS), Supplement B - EPSDT (Early and Periodic Screening, Diagnosis and Treatment) Manual.*

Keywords:

F2, Prothrombin, F5, Factor V, Hemochromatosis, HFE, TGFBI, HLA, Clotting Factor, von Willebrand factor, Transforming growth factor beta-induced, Severe Combined Immunodeficiency, SCID, HLA-A29, Uveitis, X-linked lymphoproliferative syndrome, SHD1A, XIAP, HLA-DQA1, HLA-DQB1, HLA-DQ2, HLA-DQ8, HLA-B27, Aplastic Anemia, Hemophilia A, Factor VIII, Hemophilia B, Factor IX, Fabry Disease, Thiopurine S-Methyltransferase, TPMT, Leiden, autoimmune disorder, Autosomal recessive, Birdshot chorioretinopathy, BSCR, C282Y, Celiac disease, Factor II Gene Mutation Analysis, Factor V Leiden, FISH, Genetic Testing, Hepatitis B, Hepatitis C, Hereditary Hemochromatosis, HLA haplotype testing, HLA I TYPING ALLELE HR, HLA-A29 Uveitis, HPV DNA, mutation, PCR (Polymerase Chain Reaction) Testing, Post – Intervention, Pre-Treatment, prevention, Prometheus, SCID, X-linked recessive inheritance