Harvard Pilgrim Health Care | TUFTS Health Plan

Medical Necessity Guidelines:

Genetic Testing – Prenatal Diagnosis and Carrier Screening

Effective: November 1, 2025

Prior Authorization Required If REQUIRED, submit supporting clinical documentation pertinent to service request to the FAX numbers below	Yes ☒ No ☐
Notification Required IF REQUIRED, concurrent review may apply	Yes ☐ No ☒

Applies to:

Commercial Products

☐ Harvard Pilgrim Health Care Commercial products; 800-232-0816
☒ Tufts Health Plan Commercial products; 617-972-9409

Public Plans Products

☐ Tufts Health Direct – A Massachusetts Qualified Health Plan (QHP) (a commercial product); 888-415-9055
☐ Tufts Health Together – MassHealth MCO Plan and Accountable Care Partnership Plans; 888-415-9055
☐ Tufts Health RITogether – A Rhode Island Medicaid Plan; 857-304-6404
☐ Tufts Health One Care – A dual-eligible product; 857-304-6304

Senior Products

☐ Tufts Health Plan Senior Care Options (SCO), (a dual-eligible product); 617-972-9409
☐ Tufts Medicare Preferred HMO, (a Medicare Advantage product); 617-972-9409
☐ Tufts Medicare Preferred PPO, (a Medicare Advantage product); 617-972-9409

Note: While you may not be the provider responsible for obtaining prior authorization or notifying Point32Health, as a condition of payment you will need to ensure that any necessary prior authorization has been obtained and/or Point32Health has received proper notification. If notification is required, providers may additionally be required to provide updated clinical information to qualify for continued service.

Overview

Carrier screening is used to identify individuals at risk of having a child with an autosomal recessive or X-linked recessive inherited genetic disorder. For autosomal recessive genetic disorders to be present in a child, two copies of the abnormal gene are needed, therefore each partner to the pregnancy must be a carrier for the child to inherit the disorder. If an individual is confirmed to be a carrier for an autosomal recessive inherited disorder, the individual's reproductive partner should then be offered testing for this disorder.

Targeted carrier screening is offered to individuals with an increased risk of specific genetic disorders based on family history and/or ancestry/ethnicity.

Carrier screening for some inherited disorders (e.g., spinal muscular atrophy, cystic fibrosis) are less likely to be confined to a specific high-risk ethnic group and should be offered regardless of family history or ancestry/ethnicity. Expanded carrier screening panels (also referred to as pan ethnic screening) test for conditions regardless of family history or ethnicity/ancestry.

Carrier screening is offered prior to or during pregnancy. Genetic counseling is not required but is highly recommended prior to or during pregnancy to benefit those individuals who have an increased chance of having a child with an inherited disorder.

Prenatal testing is used to detect changes in a fetus's genes or chromosomes before birth. This type of testing is offered during pregnancy if there is an increased risk that the baby will have a genetic or chromosomal disorder.

The Plan uses ChangeHealthcare InterQual Molecular Diagnostics criteria when reviewing prior authorization requests for

coverage of most genetic and molecular diagnostic test(s). A completed InterQual SmartSheet must be submitted along with the completed Genetic and Molecular Diagnostics Testing Authorization Request Form and faxed to the appropriate fax number listed above according to Plan. Include all relevant clinical information as applicable.

All genetic testing requires prior authorization. Refer to the following Medical Necessity Guidelines for prenatal genetic testing (e.g. hemoglobinopathies, chromosomal microarray analysis) and additional genetic/molecular diagnostic testing not addressed within this medical necessity guideline:

1. Comprehensive Genomic Profiling with FoundationOne® CDx or FoundationOne® Liquid CDx to Guide Cancer Treatment in Patients with Advanced Cancer
2. Breast Cancer Index
3. Genetic and Molecular Diagnostic Testing
4. Genetic and Molecular Diagnostic Testing for Tufts Health Direct, Tufts Health Together, Tufts Health RITogether, Tufts Health One Care
5. Genetic Testing: BRCA1 and BRCA2; Hereditary Breast, Ovarian and Pancreatic Cancer
6. Genetic Testing: Cell-Free DNA Screening for Fetal Trisomy
7. Genetic Testing: Gene Expression for Cancer of Unknown Primary
8. Guardant360 CDx
9. Human Leukocyte Antigen Genotyping
10. Human Leukocyte Antigen Genotyping for Tufts Health Direct, Tufts Health Together, Tufts Health RITogether, Tufts Health Care
11. Preimplantation Genetic Testing (PGT)

Clinical Guideline Coverage Criteria

In addition to applicable Change Healthcare InterQual Molecular Diagnostics criteria, Clinical Coverage Criteria apply to **ALL** prior authorization requests:

The Plan considers carrier screening medically necessary when **ALL** of the following criteria are met:

1. Member is currently pregnant or is planning a pregnancy; **and**
2. The results of carrier screening may be used to alter medical management of the pregnancy or change reproductive plans (e.g. family planning methods) of member; **and**
3. Documentation supports requested testing based on a review of risk factors, including clinical scenario, family history and/or ethnicity/ancestry; **and**
4. Requested test/testing method is considered a proven method for the identification of a genetically linked inheritable disease (i.e., the genotypes to be detected by a genetic test must be shown by scientifically valid methods to be associated with the occurrence of a disease, and the observations must be independently replicated and subject to peer review); **and**
5. Genetic condition(s) for which screening is being requested has infancy or early childhood onset and significant morbidity, which will affect quality of life from an early age and/or life expectancy.

Targeted carrier screening is medically necessary when criteria above are met; **and**

1. Positive family history and/or ancestry/ethnicity supports inherited condition(s)/genes tested.
2. If member or member's partner to pregnancy has personal and/or family history of confirmed familial variant, targeted variant testing is limited to testing of known familial variant.

Expanded carrier screening is medically necessary when criteria above are met; **and**

1. Requested panel includes only those conditions with carrier frequency ≥1/100 [3,9] and have a well-defined phenotype (such as glycogen storage disease, spinocerebellar ataxia etc.); or
2. Family history of member or member's partner to pregnancy is unknown/unavailable.
3. The member and their partner are known/suspected to be consanguineous.

Limitations

The Plan will not cover:

1. Carrier screening for a specific genetic condition more than once in a member's lifetime.
2. Carrier screening for hereditary conditions which manifest in adulthood (e.g. BRCA testing).
3. Genetic carrier screening for conditions most accurately screened by nonmolecular techniques.

4. Prenatal molecular genetic testing in a fetus for familial variants of unknown significance.
5. Whole genome sequencing is considered not medically necessary for carrier screening.
6. Thrombophilia carrier screening.

NOTE: Testing must be performed at a contracting laboratory when available.

Codes

The following code(s) require prior authorization (This list may not be all inclusive):

Table 1: CPT/HCPCS Codes

Code	Description
81161	DMD (dystrophin) (e.g., Duchenne/Becker muscular dystrophy) deletion analysis, and duplication analysis, if performed
81171	AFF2 (AF4/FMR2 family, member 2 [FMR2]) (e.g., fragile X mental retardation 2 [FRAXE]) gene analysis; evaluation to detect abnormal (e.g., expanded) alleles
81172	AFF2 (AF4/FMR2 family, member 2 [FMR2]) (e.g., fragile X mental retardation 2 [FRAXE]) gene analysis; characterization of alleles (e.g., expanded size and methylation status)
81200	ASPA (aspartoacylase) (e.g., Canavan disease) gene analysis, common variants (e.g., E285A, Y231X)
81205	BCKDHB (branched-chain keto acid dehydrogenase E1, beta polypeptide) (e.g., maple syrup urine disease) gene analysis, common variants (e.g., R183P, G278S, E422X)
81209	BLM (Bloom syndrome, RecQ helicase-like) (e.g., Bloom syndrome) gene analysis, 2281del6ins7 variant
81220	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; common variants (e.g., ACMG/ACOG guidelines)
81221	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; known familial variants
81222	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; duplication/deletion variants
81223	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; full gene sequence
81224	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; intron 8 poly-T analysis (e.g., male infertility)
81242	FANCC (Fanconi anemia, complementation group C) (e.g., Fanconi anemia, type C) gene analysis, common variant (e.g., IVS4+4A>T)
81243	FMR1 (fragile X mental retardation 1) (e.g., fragile X mental retardation) gene analysis; evaluation to detect abnormal (e.g., expanded) alleles
81244	FMR1 (fragile X mental retardation 1) (e.g., fragile X mental retardation) gene analysis; characterization of alleles (e.g., expanded size and promoter methylation status
81250	G6PC (glucose-6-phosphatase, catalytic subunit) (e.g., Glycogen storage disease, type 1a, von Gierke disease) gene analysis, common variants (e.g., R83C, Q347X)
81251	GBA (glucosidase, beta, acid) (e.g., Gaucher disease) gene analysis, common variants (e.g., N370S, 84GG, L444P, IVS2+1G>A)
81252	GJB2 (gap junction protein, beta 2, 26kDa, connexin 26) (e.g., nonsyndromic hearing loss) gene analysis; full gene sequence
81253	GJB2 (gap junction protein, beta 2, 26kDa, connexin 26) (eg, nonsyndromic hearing loss) gene analysis; known familial variants
81254	GJB6 (gap junction protein, beta 6, 30kDa, connexin 30) (eg, nonsyndromic hearing loss) gene analysis, common variants (eg, 309kb [del(GJB6-D13S1830)] and 232kb [del(GJB6-D13S1854)])
81255	HEXA (hexosaminidase A [alpha polypeptide]) (eg, Tay-Sachs disease) gene analysis, common variants (eg, 1278insTATC, 1421+1G>C, G269S)
81256	HFE (hemochromatosis) (eg, hereditary hemochromatosis) gene analysis, common variants (eg, C282Y, H63D)

Code	Description
81257	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (eg, alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; common deletions or variant (eg, Southeast Asian, Thai, Filipino, Mediterranean, alpha3.7, alpha4.2, alpha20.5, Constant Spring)
81258	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (eg, alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; known familial variant
81259	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (eg, alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; full gene sequence
81260	IKBKAP (inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein) (eg, familial dysautonomia) gene analysis, common variants (eg, 2507+6T>C, R696P)
81269	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (eg, alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; duplication/deletion variants
81290	MCOLN1 (mucolipin 1) (eg, Mucolipidosis, type IV) gene analysis, common variants (eg, IVS3-2A>G, del6.4kb)
81302	MECP2 (methyl CpG binding protein 2) (eg, Rett syndrome) gene analysis; full sequence analysis
81303	MECP2 (methyl CpG binding protein 2) (eg, Rett syndrome) gene analysis; known familial variant
81304	MECP2 (methyl CpG binding protein 2) (eg, Rett syndrome) gene analysis; duplication/deletion variants
81312	PABPN1 (poly[A] binding protein nuclear 1) (eg, oculopharyngeal muscular dystrophy) gene analysis, evaluation to detect abnormal (eg, expanded) alleles
81329	SMN1 (survival of motor neuron 1, telomeric) (eg, spinal muscular atrophy) gene analysis; dosage/deletion analysis (eg, carrier testing), includes SMN2 (survival of motor neuron 2, centromeric) analysis, if performed
81330	SMPD1(sphingomyelin phosphodiesterase 1, acid lysosomal) (eg, Niemann-Pick disease, Type A) gene analysis, common variants (eg, R496L, L302P, fsP330)
81331	SNRPN/UBE3A (small nuclear ribonucleoprotein polypeptide N and ubiquitin protein ligase E3A) (eg, Prader-Willi syndrome and/or Angelman syndrome), methylation analysis
81332	SERPINA1 (serpin peptidase inhibitor, clade A, alpha-1 antiproteinase, antitrypsin, member 1) (eg, alpha-1-antitrypsin deficiency), gene analysis, common variants (eg, *S and *Z)
81333	TGFBI (transforming growth factor beta-induced) (eg, corneal dystrophy) gene analysis, common variants (eg, R124H, R124C, R124L, R555W, R555Q)
81336	SMN1 (survival of motor neuron 1, telomeric) (eg, spinal muscular atrophy) gene analysis; full gene sequence
81337	SMN1 (survival of motor neuron 1, telomeric) (eg, spinal muscular atrophy) gene analysis; known familial sequence variant(s)
81343	PPP2R2B (protein phosphatase 2 regulatory subunit Bbeta) (eg, spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (eg, expanded) alleles
81344	TBP (TATA box binding protein) (eg, spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (eg, expanded) alleles
81361	HBB (hemoglobin, subunit beta) (eg, sickle cell anemia, beta thalassemia, hemoglobinopathy); common variant(s) (eg, HbS, HbC, HbE)
81362	HBB (hemoglobin, subunit beta) (eg, sickle cell anemia, beta thalassemia, hemoglobinopathy); known familial variant(s)
81363	HBB (hemoglobin, subunit beta) (eg, sickle cell anemia, beta thalassemia, hemoglobinopathy); duplication/deletion variant(s)
81364	HBB (hemoglobin, subunit beta) (eg, sickle cell anemia, beta thalassemia, hemoglobinopathy); full gene sequence
81412	Ashkenazi Jewish associated disorders (eg, Bloom syndrome, Canavan disease, cystic fibrosis, familial dysautonomia, Fanconi anemia group C, Gaucher disease, Tay-Sachs disease), genomic sequence analysis panel, must include sequencing of at least 9 genes, including ASPA, BLM, CFTR, FANCC, GBA, HEXA, IKBKAP, MCOLN1, and SMPD1
81443	Genetic testing for severe inherited conditions (eg, cystic fibrosis, Ashkenazi Jewish-associated disorders [eg, Bloom syndrome, Canavan disease, Fanconi anemia type C, mucolipidosis type VI, Gaucher disease, Tay-Sachs disease], beta hemoglobinopathies, phenylketonuria, galactosemia),

Code	Description
	genomic sequence analysis panel, must include sequencing of at least 15 genes (eg, ACADM, ARSA, ASPA, ATP7B, BCKDHA, BCKDHB, BLM, CFTR, DHCR7, FANCC, G6PC, GAA, GALT, GBA, GBE1, HBB, HEXA, IKBKAP, MCOLN1, PAH)
81479	Unlisted molecular pathology procedure
0400U	Obstetrics (expanded carrier screening), 145 genes by next generation sequencing, fragment analysis and multiplex ligation dependent probe amplification, DNA, reported as carrier positive or negative

References:

1. American College of Obstetricians and Gynecologists' Committee on Practice Bulletins—Obstetrics; Committee on Genetics; Society for Maternal-Fetal Medicine. Screening for Fetal Chromosomal Abnormalities: ACOG Practice Bulletin, Number 226. Obstet Gynecol. 2020;136(4):e48-e69. doi:10.1097/AOG.0000000000004084
2. American College of Obstetrics and Gynecologists. Prenatal Genetic Screening Tests. FAQ 195. September 2019.
3. American College of Obstetrics and Gynecologists. Carrier Screening for Genetic Conditions. Committee Opinion Number 691. March 2017, reaffirmed 2025. Accessed August 20, 2025. Carrier Screening for Genetic Conditions | ACOG
4. Preconception and prenatal carrier screening for genetic disease more common in people of Ashkenazi Jewish descent and others with a family history of these disorders. UpToDate.com/login [via subscription only]. Published Sep 18, 2023. Updated July 2025. Accessed August 20, 2025.
5. Preconception and prenatal expanded carrier screening. UpToDate.com/login [via subscription only]. Published May 30, 2025. Accessed August 20, 2025.
6. Sagaser KG, Malinowski J, Westerfield L, et al. Expanded carrier screening for reproductive risk assessment: An evidence-based practice guideline from the National Society of Genetic Counselors [published online ahead of print, 2023 Feb 9]. *J Genet Couns*. 2023;10.1002/jgc4.1676. doi:10.1002/jgc4.1676
7. Gregg AR, Aarabi M, Klugman S, et al. Screening for autosomal recessive and X-linked conditions during pregnancy and preconception: a practice resource of the American College of Medical Genetics and Genomics (ACMG) [published correction appears in Genet Med. 2021 Aug 27;]. *Genet Med*. 2021;23(10):1793-1806. doi:10.1038/s41436-021-01203-z
8. Preconception and prenatal panethnic expanded carrier screening. UpToDate.com/login [via subscription only]. Published May 30, 2025. Accessed August 20, 2025.
9. Fakih A, Spector-Bagdady K. Should Clinicians Leave "Expanded" Carrier Screening Decisions to Patients?. *AMA J Ethics*. 2019;21(10):E858-E864. Published 2019 Oct 1. doi:10.1001/amajethics.2019.858
10. Stevens B. Impact of Emerging Technologies in Prenatal Genetic Counseling. *Cold Spring Harb Perspect Med*. 2020;10(12):a036517. Published 2020 Dec 1. doi:10.1101/cshperspect.a036517
11. Jamal L, Schupmann W, Berkman BE. An ethical framework for genetic counseling in the genomic era. *J Genet Couns*. 2020;29(5):718-727. doi:10.1002/jgc4.1207
12. Gregg AR, Aarabi M, Klugman S, et al. Screening for autosomal recessive and X-linked conditions during pregnancy and preconception: a practice resource of the American College of Medical Genetics and Genomics (ACMG) [published correction appears in Genet Med. 2021 Aug 27;]. Genet Med. 2021;23(10):1793-1806.
13. Fragile X syndrome: Prenatal screening and diagnosis. UpToDate.com/login [via subscription only]. Published April 17, 2024. Accessed August 20, 2025.
14. Cystic fibrosis: Carrier screening. UpToDate.com/login [via subscription only]. Published July 29, 2025. Accessed August 20, 2025
15. Elson J, Drakeley A, Achilli C, Canham N, Kulke C; Royal College of Obstetricians and Gynaecologists. The Use of Expanded Carrier Screening in Reproductive Medicine: Scientific Impact Paper No. 74. BJOG. 2024 Sep;131(10):e81-e85. doi: 10.1111/1471-0528.17832. Epub 2024 Jun 5. PMID: 38839259.Expanded Carrier Screening, Hayes Precision Medicine Insights. Hayesinc.com/login [via subscription only]. Published April 18, 2024. Accessed August 20, 2025
16. Li S, Hua R, Han X, Xu Y, Li M, Gao L, Ma R, Meng W, Mao A, Wang J, Wang Y. Targeted long-read sequencing facilitates effective carrier screening for complex monogenic diseases including spinal muscular atrophy, α-/β-thalassemia, 21-hydroxylase deficiency, and fragile-X syndrome. J Transl Med. 2025 Mar 11;23(1):307. doi: 10.1186/s12967-025-06345-1. PMID: 40069872; PMCID: PMC11895162.

Approval And Revision History

September 16, 2020: Reviewed by IMPAC, renewed without changes.

Subsequent endorsement date(s) and changes made:

- June 16, 2021: Reviewed by IMPAC, renewed without changes.
- August 18, 2021: Reviewed by IMPAC, renewed without changes.
- October 26, 2021: Coding update to list of codes which do not require prior authorization.
- February 1, 2022: Template updated.
- July 20, 2022: Reviewed by Medical Policy Approval Committee (MPAC). Effective 10/1/22 prior authorization is required for all prenatal testing. MNG name changed from Prenatal, Preconception and is applicable to THP commercial only. 81243 and 81244 added to MNG. CPT codes removed from MNG: 81420 and 81507, applicable to Genetic Testing: Cell-Free DNA Testing for Fetal Trisomy, and 81224, 81228, 81229, 81336, 81337 applicable to Genetic Testing and Molecular Diagnostics MNG.
- January 18, 2023: Reviewed by MPAC. For effective date June 1, 2023, remove criteria specific to single-gene testing, refer to InterQual criteria. General criteria continues to apply. Remove genetic counseling requirement.
- June 21, 2023: Reviewed at MPAC. Criteria added: testing of conditions with early onset only, targeted screening and expanded carrier screening. CPT codes 81161, 81171, 81172, 81224, 81252, 81253, 81254, 81256, 81257, 81258, 81259, 81269, 81302, 81303, 81304, 81312, 81331, 81332, 81333, 81336, 81337, 81343, 81344, 81443, 81361, 81362, 81363, 81364, 81443, 81479, effective October 1, 2023
- July 1, 2023: Coding updated: Per AMA CPT®, effective July 1, 2023 the following code(s) added: 0400U.
- July 19, 2023: Reviewed by MPAC, renewed without changes.
- October 18, 2023: Reviewed by MPAC, renewed without changes.
- November 2023: Unify name changed to One Care effective January 1, 2024
- April 17, 2024: Reviewed by MPAC, criteria updated to allow expanded carrier screenings when the Member and their partner are known/suspected to be consanguineous, effective June 1, 2024
- August 30, 2024: Reviewed by MPAC, renewed without changes, effective October 1, 2024.
- September 17, 2025. Reviewed by MPAC, annual review no changes, effective November 1, 2025. References updated.
- October 21, 2025: Fax number for Senior Care Options, Tufts Medicare Preferred HMO and Tufts Medicare Preferred PPO updated; language for Carelink removed; Harvard Pilgrim Health Care Stride Medicare Advantage removed as an applicable product from the template

Background, Product and Disclaimer Information

Medical Necessity Guidelines are developed to determine coverage for benefits and are published to provide a better understanding of the basis upon which coverage decisions are made. We make coverage decisions using these guidelines, along with the Member's benefit document, and in coordination with the Member's physician(s) on a case-by-case basis considering the individual Member's health care needs.

Medical Necessity Guidelines are developed for selected therapeutic or diagnostic services found to be safe and proven effective in a limited, defined population of patients or clinical circumstances. They include concise clinical coverage criteria based on current literature review, consultation with practicing physicians in our service area who are medical experts in the particular field, FDA and other government agency policies, and standards adopted by national accreditation organizations. We revise and update Medical Necessity Guidelines annually, or more frequently if new evidence becomes available that suggests needed revisions.

For self-insured plans, coverage may vary depending on the terms of the benefit document. If a discrepancy exists between a Medical Necessity Guideline and a self-insured Member's benefit document, the provisions of the benefit document will govern. For Tufts Health Together (Medicaid), coverage may be available beyond these guidelines for pediatric members under age 21 under the Early and Periodic Screening, Diagnostic and Treatment (EPSDT) benefits of the plan in accordance with 130 CMR 450.140 and 130 CMR 447.000, and with prior authorization.

Treating providers are solely responsible for the medical advice and treatment of Members. The use of this guideline is not a guarantee of payment, or a final prediction of how specific claim(s) will be adjudicated. Claims payment is subject to eligibility and benefits on the date of service, coordination of benefits, referral/authorization, utilization management guidelines when applicable, and adherence to plan policies, plan procedures, and claims editing logic.