Medical Necessity Guidelines:
Genetic Testing: Prenatal Diagnosis, Carrier Screening

Effective: November 1, 2022

Prior Authorization Required If REQUIRED, submit supporting clinical documentation pertinent to service request.	**Yes ☒ No ☐**

Applies to:
COMMERCIAL Products
☒Tufts Health Plan Commercial products; Fax: 617.972.9409
- CareLink℠ – Refer to CareLink Procedures, Services and Items Requiring Prior Authorization

TUFTS HEALTH PUBLIC PLANS Products
☐Tufts Health Direct – A Massachusetts Qualified Health Plan (QHP) (a commercial product); Fax:888.415.9055
☐Tufts Health Together – MassHealth MCO Plan and Accountable Care Partnership Plans; Fax: 888.415.9055
☐Tufts Health RITogether – A Rhode Island Medicaid Plan; Fax: 857.304.6404
☐Tufts Health Unify* – OneCare Plan (a dual-eligible product); Fax: 857.304.6304
*The MNG applies to Tufts Health Unify members unless a less restrictive LCD or NCD exists.

SENIOR Products
- Tufts Health Plan Senior Care Options (SCO), (a dual-eligible product) – Refer to the Tufts Health Plan SCO Prior Authorization List
- Tufts Medicare Preferred HMO, (a Medicare Advantage product) – Refer to the Tufts Medicare Preferred HMO Prior Authorization and Inpatient Notification List

Note: While you may not be the provider responsible for obtaining prior authorization, as a condition of payment you will need to make sure that prior authorization has been obtained.

OVERVIEW

There are two types of genetic testing that are performed in the preconception and/or prenatal period:

Carrier testing is used to identify individuals who carry a gene mutation that can increase the risk of having a child with an inherited genetic disorder. Carrier testing is offered prior to or during pregnancy. Carrier screening for some genetic disorders (e.g. spinal muscular atrophy, cystic fibrosis) may be offered to woman regardless of family history or ethnicity. More targeted carrier screening tests may be offered to individuals with an increased risk of specific genetic disorders based on family history or ethnicity. 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.

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.

Genetic counseling prior to or during pregnancy may benefit individuals who have an increased chance of having a child with an inherited disorder.

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 testing not addressed within this guideline:

Genetic Testing: Cell-Free DNA Testing for Fetal Trisomy
Preimplantation Genetic Diagnosis (PGD)
Genetic and Molecular Diagnostic Testing

CLINICAL COVERAGE CRITERIA

1. The Plan may authorize coverage for single-gene carrier testing if the Member meets ALL of the following criteria (NOTE: Documentation, including a letter of medical necessity is required):
   a. Member is currently pregnant or is planning a pregnancy and one of the following criteria is met:
      i. Member has family history of confirmed genetic disorder. NOTE: If testing of family member(s) has confirmed a familial variant, carrier testing of Member should be limited to targeted testing of known familial variant; or
      ii. Member's reproductive partner is known carrier of autosomal recessive disorder; and
   b. The results of the test will alter the medical management of the pregnancy and/or the reproductive choices of the Member; and
   c. Documentation is provided by an MD geneticist, a licensed genetic counselor or a physician with expertise in genetic counseling and supports the recommendation for testing based on a review of risk factors, clinical scenario and family history; and
   d. 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
   e. Multi-gene panel testing is medically necessary when the individual's personal and/or family history meets one or more criteria above for all of the genes included in requested panel.

2. The Plan may authorize coverage of carrier screening for cystic fibrosis (CF) (CPT 81220) and/or spinal muscular atrophy (SMA) (CPT 81329) when previous testing has not been completed.

3. The Plan may authorize carrier screening of targeted variant(s) of listed genetic disorders when Member or Member's reproductive partner is of Ashkenazi descent: cystic fibrosis, familial dysautonomia, Tay-Sachs disease, Canavan disease, Fanconi anemia group Cy, Niemann-Pick disease type A, Bloom syndrome, Mucolipidosis type IV, Gaucher disease type 12.

4. The Plan may authorize carrier screening for Tay–Sachs disease (CPT 81255) when Member or Member's reproductive partner is of Ashkenazi and/or French Canadian descent.

5. The Plan may authorize carrier screening for maple syrup urine disease (MSUD) when Member or Member's reproductive partner is of Mennonite descent.

6. The Plan may authorize preconception or prenatal genetic testing for Fragile X syndrome (FMR1) when one of the following criteria is met:
   a. Family history of unexplained intellectual disability/developmental delay or autism in a blood relative; or
   b. Member is female with a personal or family history of premature ovarian insufficiency.

7. The Plan may authorize cystic fibrosis transmembrane conductance regulator (CFTR) full gene sequencing (81223) when one of the following criteria is met:
   a. Member's reproductive partner is a known carrier of CF variant; or
   b. Member has a family history of CF and variant is not known; or
   c. There is a high clinical suspicion of CF in a pregnancy, e.g., fetal echogenic bowel; or
   d. Member is of an ancestry where common variants are less likely, e.g., Asian, African American, Hispanic; or
   e. Member has a family history of CF and the specific P/LP variant is known.

8. The Plan may authorize CTFR known familial P/LP variant analysis (81221) when Member has a family history of CF and the specific P/LP variant is known.

9. Multi-gene panel testing is medically necessary when the individual's personal and/or family history meets one or more criteria above for all of the genes included in requested panel.

10. The Plan may authorize single gene or multi-gene prenatal genetic testing of fetus when the results of the test will alter the medical management of the pregnancy and/or the reproductive choices of the Member and the requested test/testing method is considered a proven method for the identification of suspected genetically linked inheritable disease.

LIMITATIONS

The Plan will not cover:

1. Carrier screening for a specific genetic condition more than once in a member's lifetime.
2. CTFR deletion/duplication testing for routine carrier screening.
3. Prenatal molecular genetic testing in a fetus for familial variants of unknown significance
4. Testing considered not medically necessary for carrier screening:
   a. Whole genome sequencing
   b. Thrombophilia screening

CODES

The following CPT codes require prior authorization:

Codes	Description
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
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) (eg, fragile X mental retardation) gene analysis; evaluation to detect abnormal (eg, expanded) alleles
81244	FMR1 (fragile X mental retardation 1) (eg, fragile X mental retardation) gene analysis; characterization of alleles (eg, 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)
81255	HEXA (hexosaminidase A [alpha polypeptide]) (e.g., Tay-Sachs disease) gene analysis, common variants (e.g., 1278insTATC, 1421+1G>C, G269S)
81260	IKBKAP (inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase complex-associated protein) (e.g., familial dysautonomia) gene analysis, common variants (e.g., 2507+6T>C, R696P)
81290	MCOLN1 (mucolipin 1) (e.g., Mucolipidosis, type IV) gene analysis, common variants (e.g., IVS3-2A>G, del6.4kb)
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) (e.g., Niemann-Pick disease, Type A) gene analysis, common variants (e.g., R496L, L302P, fsP330)

81412	Ashkenazi Jewish associated disorders (e.g., 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

REFERENCES

1. American College of Obstetricians and Gynecologists. Screening for fetal chromosomal abnormalities. Practice Bulletin #163. May 2016. (Replaces Practice Bulletin #77). Last accessed July 13, 2017.U.S. National Library of Medicine. What are the types of genetic tests? Genetics Home Reference. Retrieved on January 12, 2007 from: ghr.nlm.nih.gov/handbook/testing/uses. Published July 11, 2017. Last accessed July 13, 2017.
2. American College of Obstetricians and Gynecologists. Carrier Screening in the Age of Genomic Medicine. Committee Opinion Number 690, March 2017, reaffirmed 2019. Accessed January 7, 2020.
3. American College of Obstetrics and Gynecologists. Prenatal Genetic Screening Tests. FAQ 195. September 2019. Accessed January 7, 2020.
4. American College of Obstetrics and Gynecologists. Carrier Screening for Genetic Conditions. Committee Opinion Number 691. March 2017, reaffirmed 2019. Accessed July 13, 2022. Carrier Screening for Genetic Conditions | ACOG
5. Roman AS, MD, MPH. 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. By subscription only UpToDate. Accessed July 13, 2022. 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
6. Bodamer OA, MD, PhD, FAAP, FACMG. Overview of maple syrup urine disease. By subscription only UpToDate. Accessed July 13, 2022. Overview of maple syrup urine disease - UpToDate
7. Lockwood CJ, MD, MHCM; Magriples U, MD. Prenatal care: Initial assessment. By subscription only UpToDate. Accessed July 13, 2022. Prenatal care: Initial assessment - UpToDate

APPROVAL HISTORY

February 1, 2007: Reviewed by the Clinical Coverage Criteria Committee

Subsequent endorsement date(s) and changes made:

- January 30, 2008: Preimplantation Genetic Determination limitation removed from guideline
- March 16, 2009: Reviewed and renewed without changes
- December 16, 2009: Reviewed and no changes made
- February 1, 2010: Reviewed by Medical Policy Advisory Group Committee (MSPAC), no changes
- March 2011: Reviewed by MSPAC. Preconception added to title. Cystic fibrosis and spinal muscular atrophy added to covered without prior authorization section
- March 7, 2012: Reviewed by Integrated Medical Policy Advisory Committee (IMPAC), no changes
- November 28, 2012: Reviewed at IMPAC. A link was added for access to the Medical Necessity Guideline 'Genetic Testing: Maternal Tests for Fetal Trisomy'.
- October 9, 2013: Reviewed by IMPAC, renewed without changes.
- September 30, 2014: Adopted by Tufts Health Plan – Network Health Commercial Plans and Tufts Health Plan – Network Health Medicaid Plans.
- October 8, 2014: Reviewed by IMPAC, renewed without changes.
- November 19, 2014: Reviewed by IMPAC, renewed without changes.
- September 2015: Branding and template change to distinguish Tufts Health Plan products in "Applies to" section. Added Tufts Health Freedom Plan products, effective January 1, 2016.
- November 16, 2015: Reviewed by IMPAC, renewed without changes
- November 9, 2016: Reviewed by IMPAC, renewed without changes
- December 14, 2016: Reviewed by IMPAC, renewed without changes
- July 2017: Added RITogether Plan product to template. For MNGs applicable to RITogether, effective date is August 1, 2017
- October 11, 2017: Reviewed by IMPAC, renewed without changes
- December 13, 2017: Reviewed by IMPAC, renewed without changes
- July 25, 2018: Reviewed by IMPAC, renewed without changes
- September 12, 2018: Reviewed by IMPAC, renewed without changes
- October 2018: Template and disclaimer updated
- July 17, 2019: Reviewed by IMPAC, renewed with no changes

- September 18, 2019: Reviewed by IMPAC, renewed without changes
- February 19, 2020: Reviewed at IMPAC. For effective date July 1, 2020, criteria clarified that testing covered without prior authorization applies to female partner, genetic testing for male reproductive partner requires prior authorization. Added MD geneticist to criteria regarding required documentation of counseling. Added to limitations section carrier screening for a specific genetic condition more than once in a member's lifetime. CPT code table of covered testing added.
- April 6, 2020: Fax number for Unify updated.
- June 17, 2020: Reviewed by IMPAC, renewed without changes.
- September 16, 2020: Reviewed by IMPAC, renewed without changes.
- 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 November 1, 2022 prior authorization is required for all prenatal testing. MNG name changed from Prenatal, Preconception and is applicable to THP commercial only. CPT codes 81243 and 81244 added to MNG. CPT codes removed from MNG: 81420 and 81507, refer to Genetic Testing: Cell-Free DNA Testing for Fetal Trisomy, and 81224, 81228, 81229, 81336, 81337, refer to Genetic Testing and Molecular Diagnostics MNG.

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.

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.

Provider Services