Genetic Testing: Lung Disorders

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<td>See list below</td>
<td>81400, 81401, 81402, 81403, 81404, 81405, 81406, 81407, 81408</td>
</tr>
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</table>

**Policy Statement**

SERPINA1 Known Familial Variant Analysis

I. SERPINA1 targeted variant analysis for a known familial variant (81332, 81403) may be considered medically necessary when:
   A. The member has a close relative with a known pathogenic or likely pathogenic variant in SERPINA1.

II. SERPINA1 targeted variant analysis for a known familial variant (81332, 81403) is considered investigational for all other indications.

SERPINA1 Common Variant Analysis or Sequencing and/or Deletion/Duplication Analysis

III. SERPINA1 common variant analysis (81332) or sequencing and/or deletion/duplication analysis (81479) to establish a diagnosis of alpha-1 antitrypsin (AAT) deficiency may be considered medically necessary when the member has both of the following:
   A. The member has abnormally low (less than 120 mg/dL) or borderline (90-140 mg/dL) alpha-1 antitrypsin levels (as measured by nephelometry)
   B. Any of the following:
      1. Early-onset emphysema (45 years of age or younger)
      2. Emphysema in the absence of additional risk factor (e.g., smoking, occupational dust exposure)
      3. Emphysema with prominent basilar hyperlucency
      4. Otherwise unexplained liver disease
      5. Necrotizing panniculitis
      6. C-ANCA positive vasculitis (i.e., granulomatosis with polyangiitis)
      7. Bronchiectasis without evident etiology
8. A sibling with known Alpha-1-antitrypsin (AAT) deficiency

IV. SERPINA1 common variant analysis (81332) or sequencing and/or deletion/duplication analysis (81479) to establish a diagnosis of alpha-1 antitrypsin deficiency is considered investigational for all other indications.

Other Covered Lung Disorders
The following is a list of conditions that have a known genetic association. Due to their relative rareness, it may be appropriate to cover these genetic tests to establish or confirm a diagnosis.

V. Genetic testing to establish or confirm one of the following genetic lung disorders to guide management may be considered medically necessary when the member demonstrates clinical features* consistent with the disorder (the list is not meant to be comprehensive, see IV below):
   A. Familial Pulmonary Fibrosis
   B. Primary Ciliary Dyskinesia
   C. Pulmonary lymphangioleiomyomatosis (LAM)
   D. Pulmonary alveolar proteinosis (PAP)

VI. Genetic testing to establish or confirm the diagnosis of all other lung disorders not specifically discussed within this or another medical policy will be evaluated by the criteria outlined in General Approach to Genetic and Molecular Testing (see policy for coverage criteria).

*Clinical features for a specific disorder may be outlined in resources such as GeneReviews, OMIM, National Library of Medicine, Genetics Home Reference, or other scholarly source.

NOTE: Refer to Appendix A to see the policy statement changes (if any) from the previous version.

Policy Guidelines

Notes and Definitions
1. Close relatives include first, second, and third degree blood relatives:
   a. First-degree relatives are parents, siblings, and children
   b. Second-degree relatives are grandparents, aunts, uncles, nieces, nephews, grandchildren, and half siblings
   c. Third-degree relatives are great grandparents, great aunts, great uncles, great grandchildren, and first cousins

Description

One of the most common forms of inherited lung disorders is alpha-1 antitrypsin deficiency (AATD). AATD is an autosomal recessive genetic disorder that results in decreased production of the alpha-1 antitrypsin (AAT) protein, or production of abnormal types of the protein that are functionally deficient. Individuals with AATD have an increased risk to develop lung and liver disease. Genetic testing to diagnose AATD aids in directing proper treatment and identifying at-risk family members.

Related Policies

This policy document provides coverage criteria for Genetic Testing for Lung Disorders. Please refer to:

• Genetic Testing: Multisystem Inherited Disorders, Intellectual Disability, and Developmental Delay for coverage criteria related to diagnostic testing for cystic fibrosis and other multisystem inherited disorders. (to be published)
Gene testing: General Approach to Genetic and Molecular Testing

for coverage criteria related to genetic testing for lung disorders and disease that are not specifically discussed in this or another non-general policy.

Benefit Application

Benefit determinations should be based in all cases on the applicable contract language. To the extent there are any conflicts between these guidelines and the contract language, the contract language will control. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal mandates (e.g., Federal Employee Program [FEP]) prohibits plans from denying Food and Drug Administration (FDA)-approved technologies as investigational. In these instances, plans may have to consider the coverage eligibility of FDA-approved technologies on the basis of medical necessity alone.

Regulatory Status

• N/A

Rationale

Alpha-1 Antitrypsin Deficiency - SERPINA1 Known Familial Variant Analysis

The Genetic Support Foundation’s Genetics 101 information on genetic testing says the following about testing for familial pathogenic variants:

- Genetic testing for someone who may be at risk for an inherited disease is always easier if we know the specific genetic cause. Oftentimes, the best way to find the genetic cause is to start by testing someone in the family who is known or strongly suspected to have the disease. If their testing is positive, then we can say that we have found the familial pathogenic (harmful) variant. We can use this as a marker to test other members of the family to see who is also at risk.

Alpha-1 Antitrypsin Deficiency - SERPINA1 Common Variant Analysis or Sequencing and/or Deletion/Duplication Analysis


A normal range of plasma alpha-1 antitrypsin (measured via nephelometry) is 83/120 - 200/220 mg/dL. Individuals with borderline normal levels of plasma alpha-1 antitrypsin (90-140 mg/dL) or with abnormally low levels (below 120 mg/dL) should be evaluated for alpha-1 antitrypsin deficiency. (p. 826)

"The following features should prompt suspicion by physicians that their patient may be more likely to have AAT deficiency:

- Early-onset emphysema (age of 45 years or less)
- Emphysema in the absence of a recognized risk factor (smoking, occupational dust exposure, etc.)
- Emphysema with prominent basilar hyperlucency
- Otherwise unexplained liver disease
- Necrotizing panniculitis
- Anti-proteinase 3-positive vasculitis (C-ANCA [anti-neutrophil cytoplasmic antibody]-positive vasculitis)
- Family history of any of the following: emphysema, bronchiectasis, liver disease, or panniculitis
- Bronchiectasis without evident etiology..." (p. 820)

The statement also recommended that individuals with a sibling with AAT deficiency should also be offered genetic testing. (p. 827)

References


Documentation for Clinical Review

Please provide the following documentation:

- Name of the test being requested or the Concert Genetics GTU identifier. The Concert Genetics GTU can be found at https://app.concertgenetics.com
- CPT codes to be billed for the particular genetic test (GTU required for unlisted codes)
- History and physical and/or consultation notes including:
  - Clinical findings:
    - Signs/symptoms leading to a suspicion of genetic condition
    - Family history if applicable
  - Prior evaluation/treatment:
    - Previous test results (i.e., imagining, lab work, etc.) related to reason for genetic testing
    - Family member’s genetic test result, if applicable
  - Rationale
    - Reason for performing test
    - How test result will impact clinical decision making

Post Service (in addition to the above, please include the following):

- Results/reports of tests performed

Coding

This Policy relates only to the services or supplies described herein. Benefits may vary according to product design; therefore, contract language should be reviewed before applying the terms of the Policy.
The following codes are included below for informational purposes. Inclusion or exclusion of a code(s) does not constitute or imply member coverage or provider reimbursement policy. Policy Statements are intended to provide member coverage information and may include the use of some codes for clarity. The Policy Guidelines section may also provide additional information for how to interpret the Policy Statements and to provide coding guidance in some cases.

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td></td>
<td>81332</td>
<td>SERPINA1 (serpin peptidase inhibitor, clade A, alpha-1 antiproteinase,</td>
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<tr>
<td>CPT*</td>
<td></td>
<td>antitrypsin, member 1) (e.g., alpha-1-antitrypsin deficiency), gene analysis,</td>
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<tr>
<td></td>
<td>81400</td>
<td>Molecular Pathology Procedure Level 1</td>
</tr>
<tr>
<td></td>
<td>81401</td>
<td>Molecular Pathology Procedure Level 2</td>
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<td>81479</td>
<td>Unlisted molecular pathology procedure</td>
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<tr>
<td>HCPCS</td>
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Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Action</th>
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<tr>
<td>12/01/2023</td>
<td>New policy.</td>
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Definitions of Decision Determinations

**Medically Necessary:** Services that are Medically Necessary include only those which have been established as safe and effective, are furnished under generally accepted professional standards to treat illness, injury or medical condition, and which, as determined by Blue Shield, are: (a) consistent with Blue Shield medical policy; (b) consistent with the symptoms or diagnosis; (c) not furnished primarily for the convenience of the patient, the attending Physician or other provider; (d) furnished at the most appropriate level which can be provided safely and effectively to the patient; and (e) not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of the Member’s illness, injury, or disease.

**Investigational/Experimental:** A treatment, procedure, or drug is investigational when it has not been recognized as safe and effective for use in treating the particular condition in accordance with generally accepted professional medical standards. This includes services where approval by the federal or state governmental is required prior to use, but has not yet been granted.

**Split Evaluation:** Blue Shield of California/Blue Shield of California Life & Health Insurance Company (Blue Shield) policy review can result in a split evaluation, where a treatment, procedure, or drug will be considered to be investigational for certain indications or conditions, but will be deemed safe and
effective for other indications or conditions, and therefore potentially medically necessary in those instances.

**Prior Authorization Requirements and Feedback (as applicable to your plan)**

Within five days before the actual date of service, the provider must confirm with Blue Shield that the member’s health plan coverage is still in effect. Blue Shield reserves the right to revoke an authorization prior to services being rendered based on cancellation of the member’s eligibility. Final determination of benefits will be made after review of the claim for limitations or exclusions.

Questions regarding the applicability of this policy should be directed to the Prior Authorization Department at (800) 541-6652, or the Transplant Case Management Department at (800) 637-2066 ext. 3507708 or visit the provider portal at [www.blueshieldca.com/provider](http://www.blueshieldca.com/provider).

We are interested in receiving feedback relative to developing, adopting, and reviewing criteria for medical policy. Any licensed practitioner who is contracted with Blue Shield of California or Blue Shield of California Promise Health Plan is welcome to provide comments, suggestions, or concerns. Our internal policy committees will receive and take your comments into consideration.

For utilization and medical policy feedback, please send comments to: [MedPolicy@blueshieldca.com](mailto:MedPolicy@blueshieldca.com)

*Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. Blue Shield of California may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over medical policy and must be considered first in determining covered services. Member contracts may differ in their benefits. Blue Shield reserves the right to review and update policies as appropriate.*
### POLICY STATEMENT

<table>
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<tr>
<td><strong>New Policy</strong></td>
<td>Genetic Testing: Lung Disorders BSC_CON_2.23</td>
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</table>
| **Policy Statement:** N/A | **Policy Statement:**  
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