Medical Policy

PARAMOUNT

HMO AND PPO
ELITE (MEDICARE ADVANTAGE)
MARKETPLACE

PTEN Genetic Testing

Policy Number: PG0336
Last Review: 06/26/2019

GUIDELINES:

- This policy does not certify benefits or authorization of benefits, which is designated by each individual policyholder terms, conditions, exclusions, and limitations contract. It does not constitute a contract or guarantee regarding coverage or reimbursement/payment. Self-Insured group specific policy will supersede this general policy when group supplementary plan document or individual plan decision directs otherwise.
- Paramount applies coding edits to all medical claims through coding logic software to evaluate the accuracy and adherence to accepted national standards.
- This medical policy is solely for guiding medical necessity and explaining correct procedure reporting used to assist in making coverage decisions and administering benefits.

SCOPE:

X Professional
X Facility

DESCRIPTION:

The phosphatase and tensin homolog on chromosome 10 (*PTEN*) is a tumor suppressor gene on chromosome 10q23. The *PTEN* protein assists with the regulation of cell migration, the adhesion of cells to surrounding tissues, and angiogenesis. Loss of function of this gene contributes to oncogenesis.

Germline mutations in *PTEN* have been associated with a variety of rare conditions collectively known as *PTEN* hamartoma tumor syndrome (PHTS). The hallmark clinical feature of PHTS is the presence of hamartomatous tumors, which are benign tumors resulting from an overgrowth of normal tissue. PHTS includes Cowden syndrome (CS), and Bannayan-Riley-Ruvalcaba syndrome (BRRS). Some consider Proteus syndrome (PS) and Proteus-like syndrome to be part of the PHTS spectrum, however, it is now known that AKT1 mutations can cause Proteus syndrome. Although CS is the only PHTS disorder associated with a documented predisposition to multiple malignancies, including breast, thyroid, colon, and endometrium, it has been suggested that individuals with other PHTS syndromes associated with *PTEN* mutations should be assumed to have cancer risks similar to CS. When characteristic features of CS are present, in particular the cancers associated with this condition, but do not meet the strict criteria for a diagnosis of Cowden syndrome, the term "Cowden-like syndrome" (CS-like) is used.

POLICY:

Paramount Commercial Insurance Plans and Elite (Medicare Advantage) Plans
***PTEN* gene testing (81321-81323) requires prior authorization.**

Multigene panels (including next-generation sequencing [NGS]) for hereditary cancer susceptibility require prior authorization (see medical policy PG0453).

COVERAGE CRITERIA:

Paramount Commercial Insurance Plans and Elite (Medicare Advantage) Plans

PTEN genetic testing is considered **medically necessary** for the following:

- The individual has a first or second-degree relative with a known *PTEN* mutation (excluding Elite/Paramount Medicare Plan);

OR

- The individual meets clinical diagnostic criteria for and/or has a personal history of:

- Bannayan-Riley Ruvalcaba syndrome (BRRS)
- Cowden syndrome/*PTEN* Hamartoma Tumor Syndrome

OR

- The individual has a personal history of:
  - Adult Lhermitte-Duclos disease (cerebellar tumors)
  - Autism spectrum disorder and macrocephaly.

OR

- The individual meets any of the following testing criteria for Cowden syndrome:
  - Two or more biopsy proven trichilemmomas; **or**
  - Two or more major criteria (one must be macrocephaly); **or**
  - Three or more (without macrocephaly) of the *major criteria* listed below; **or**
  - One *major* and three or more of the *minor criteria* listed below; **or**
  - Four or more of the *minor criteria* listed below.

OR

- The individual has:
  - A first-degree relative with a clinical diagnosis of CS or BRRS who is not available for testing, **and**
  - One of the *major criteria* or two of the *minor criteria* listed below.

Major Criteria

- Breast cancer; or
- Endometrial cancer; or
- Follicular thyroid cancer; or
- Multiple GI hamartomas or ganglioneuromas; or
- Macrocephaly (greater than or equal to the 97th percentile; 58cm in adult women, 60 cm in adult men); or
- Macular pigmentation of glan penis; or
- Mucocutaneous lesions:
  - One biopsy proven trichelemmoma; **or**
  - Multiple palmoplantar keratoses; **or**
  - Multiple or extensive oral mucosal papillomatosis; **or**
  - Multiple cutaneous facial papules (often verrucous).

Minor Criteria

- Autism spectrum disorder; or
- Colon cancer; or
- Esophageal glycogenic acanthosis (≥ 3); or
- Lipomas; or
- Intellectual Disability (i.e., ≤ 75); or
- Papillary or follicular variant of papillary thyroid cancer; or
- Thyroid structural lesions (eg, adenoma, nodule[s], goiter); or
- Renal cell carcinoma; or
- Single GI hamartoma or ganglioneuroma; or
- Testicular lipomatosis; or
- Vascular anomalies (including multiple intracranial developmental venous anomalies).

Note: If two criteria involve the same structure, organ, or tissue, both may be counted as criteria met.

CODING/BILLING INFORMATION:

The appearance of a code in this section does not necessarily indicate coverage. Codes that are covered may have selection criteria that must be met. Payment for supplies may be included in payment for other services rendered.

CPT CODES	
81321	*PTEN (phosphatase and tensin homolog)* (eg, Cowden syndrome, *PTEN* hamartoma tumor syndrome) gene analysis; full sequence analysis
81322	*PTEN (phosphatase and tensin homolog)* (eg, Cowden syndrome, *PTEN* hamartoma tumor syndrome) gene analysis; known familial variant

81323	*PTEN (phosphatase and tensin homolog)* (eg, Cowden syndrome, *PTEN* hamartoma tumor syndrome) gene analysis; duplication/deletion variant

REVISION HISTORY EXPLANATION: ORIGINAL EFFECTIVE DATE: 10/22/2015

Date	Explanation & Changes
10/22/2015	• Policy created to reflect most current clinical evidence per TAWG
02/26/2016	• Added effective 1/1/16 new code 81432 • Added effective 1/1/16 revised codes 81435, 81436, 81445, 81455 • Policy reviewed and updated to reflect most current clinical evidence per TAWG
10/28/2016	• Policy reviewed and updated to reflect most current clinical evidence per TAWG
01/25/2018	• Removed codes 81432, 81435, 81436, 81445, 81455 • Policy reviewed and updated to reflect most current clinical evidence per TAWG
06/26/2019	• Policy reviewed and updated to reflect most current clinical evidence per the National Comprehensive Cancer Network®
12/21/2020	• Medical policy placed on the new Paramount Medical Policy Format
02/22/2023	• Medical Policy updated to reflect Medicaid coverage to Anthem as of 02/01/2023
03/08/2024	• Medical policy placed on the new Paramount Medical Policy Format

Paramount reserves the right to review and revise our policies periodically when necessary. When there is an update, we will publish the most current policy to https://www.paramounthealthcare.com/providers/medical-policies/policy-library

REFERENCES/RESOURCES

Centers for Medicare and Medicaid Services, CMS Manual System and other CMS publications and services https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Internet-Only-Manuals-IOMs

American Medical Association, *Current Procedural Terminology (CPT®)* and associated publications and services https://www.ama-assn.org/amaone/cpt-current-procedural-terminology

Centers for Medicare and Medicaid Services, Healthcare Common Procedure Coding System, HCPCS Release and Code Sets https://www.cms.gov/Medicare/Coding/HCPCSReleaseCodeSets/HCPCS-Quarterly-Update

U.S. Preventive Services Task Force, https://www.uspreventiveservicestaskforce.org/uspstf/
Industry Standard Review

Hayes, Inc., https://www.hayesinc.com/

Industry Standard Review

National Comprehensive Cancer Network® (NCCN), Genetic Familial High-Risk Assessment: Breast and Ovarian, Version 3.2019

Pilarski R, et al. Cowden syndrome and the *PTEN* hamartoma tumor syndrome: Systematic review and revised diagnostic criteria. JNCI: Journal of the National Cancer Institute, Volume 105, Issue 21, 6 November 2013, Pages 1607–1616, https://doi.org/10.1093/jnci/djt277

Online Mendelian Inheritance of Man (OMIM), Phosphatase and Tensin Homolog, *PTEN*

Genetics Home Reference, National Institute of Health, U.S. Library of Medicine, *PTEN* gene
Eng, C, GeneReviews®, *PTEN* Hamartoma Tumor Syndrome