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## Non-Covered Genetic Panel Tests

MEDICAL POLICY NUMBER: 213

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**INSTRUCTIONS FOR USE:** Company Medical Policies serve as guidance for the administration of plan benefits. Medical policies do not constitute medical advice nor a guarantee of coverage. Company Medical Policies are reviewed annually and are based upon published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last policy update. The Company reserves the right to determine the application of medical policies and make revisions to medical policies at any time. The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and Company Medical Policy will be resolved in favor of the coverage agreement. Coverage decisions are made on the basis of individualized determinations of medical necessity and the experimental or investigational character of the treatment in the individual case. In cases where medical necessity is not established by policy for specific treatment modalities, evidence not previously considered regarding the efficacy of the modality that is presented shall be given consideration to determine if the policy represents current standards of care.

**SCOPE:** Providence Health Plan, Providence Health Assurance, and Providence Plan Partners as applicable (referred to individually as “Company” and collectively as “Companies”).

## PLAN PRODUCT AND BENEFIT APPLICATION

Commercial

Medicaid/OHP\*

Medicare\*\*

### \*Medicaid/OHP Members

*Oregon*: Services requested for Oregon Health Plan (OHP) members follow the OHP Prioritized List and Oregon Administrative Rules (OARs) as the primary resource for coverage determinations. Medical policy criteria below may be applied when there are no criteria available in the OARs and the OHP Prioritized List.

### \*\*Medicare Members

This Company policy may be applied to Medicare Plan members only when directed by a separate Medicare policy. Note that investigational services are considered “**not medically necessary**” for Medicare members.

## COVERAGE CRITERIA

### Notes:

- This policy does not address the following:
  - Whole exome or genome sequencing.
  - Genetic tests related to reproductive planning or prenatal testing.
- The list of non-covered panels addressed in this policy is not all-inclusive.
- Due to the rapidly changing field of genetic testing, panel names, genes included within the panel, and coding may change subsequent to the last update of this policy.
- Other Medical Policies may apply:
  - Please see [Cross References](#) section below for medical policies which may apply to specific hereditary or oncologic conditions.
  - If available, condition- or test-specific policies should be used to review single gene or genetic panel tests. For example, genetic panel testing for hereditary colorectal cancer is addressed in the *Genetic Testing: Inherited Susceptibility to Colorectal Cancer* medical policies.
  - Please refer to the PHP *Genetic and Molecular Testing* company medical policy for genetic panel testing medical necessity criteria not addressed in more specific medical policies.

### **Non-Coverage Criteria**

- I. Genetic panel testing is considered **not medically necessary** when there is insufficient evidence that the panel has proven clinical utility. (Please see Policy Guidelines below for definition of panel testing.) To establish clinical utility, **both** of the following criteria (A. and B) must be met for each gene and/or component of the panel test:
  - A. Testing allows for a definitive diagnosis or risk classification and **either** of the following are met:
    1. Other clinical and/or laboratory tests were inconclusive; **or**
    2. Testing avoids a more invasive diagnostic testing (i.e., muscle biopsy); **and**
  - B. Test results will guide decisions in clinical management (predictive, diagnostic, prognostic, or therapeutic).

Genetic panel tests for which clinical utility has not been established are considered **not medically necessary**, including but not limited to the following tests:

<b>Proprietary Test Name</b>	<b>Laboratory</b>	<b>Proprietary Code</b>
<b>AlloSure Kidney</b>	CareDx	None
<b>Bridge Urinary Tract Infection Detection and Resistance Test</b>	Bridge Diagnostics	0321U
<b>CancerTYPE ID®</b>	Biotheranostics	None
<b>Cardiomyopathy Panel</b>	GeneDx	None
<b>Clarava</b>	Verici Dx	0319U
<b>Colvera</b>	Clinical Genomics	None
<b>Copper Metabolism Disorders Panel</b>	Invitae	None
<b>CxBladder Detect</b>	Pacific Edge, Ltd.	0012M
<b>CxBladder Monitor</b>	Pacific Edge, Ltd.	0013M
<b>CxBladder Triage</b>	Pacific Edge, Ltd.	0363U
<b>DecisionDx-SCC</b>	Castel Biosciences	0315U
<b>DCMNext</b>	Ambry Genetics	None
<b>DetermaRx</b>	Oncocyte Corporation	0288U
<b>Developmental Eye Disease Panel</b>	Molecular Vision Laboratory	None
<b>EpiSwitch CiRT (Checkpoint-inhibitor Response Test)</b>	Next Bio-Research Services, LLC, Oxford BioDynamics, PLC	0332U
<b>GenoMind Professional PGx Express (includes CORE Anxiety &amp; Depression Report [15 Genes] and/or FULL Mental Health Report [24 Genes])</b>	Genomind	0175U
<b>Hemiplegic Migraine Panels</b>	GeneDx	None
<b>Infantile Epilepsy Panel</b>	GeneDx	None
<b>Invitae Arrhythmia and Cardiomyopathy Comprehensive Panel</b>	Invitae	None
<b>Invitae Comprehensive Neuromuscular Disorders Panel</b>	Invitae	None
<b>Invitae Comprehensive Neuropathies Panel</b>	Invitae	None
<b>Invitae Connective Tissue Disorders Panel</b>	Invitae	None
<b>Invitae Dystonia Comprehensive Panel</b>	Invitae	None
<b>Invitae Ehlers-Danlos Syndrome Panel</b>	Invitae	None
<b>Invitae Epilepsy Panel</b>	Invitae	None
<b>Invitae Monogenic Inflammatory Bowel Disease Panel</b>	Invitae	None

<b>Johns Hopkins Metagenomic Next Generation Sequencing Assay for Infectious Disease</b>	Johns Hopkins Medical Microbiology Laboratory	0323U
<b>Maternal Fetal Screen T1</b>	Eurofins	None
<b>Megalencephaly Panel</b>	Seattle Children's Hospital	None
<b>MindX Blood Test- Longevity</b>	MindX Sciences	0294U
<b>MindX Blood Test- Memory/Alzheimer's</b>	MindX Sciences	0289U
<b>MindX Blood Test- Mood</b>	MindX Sciences	0291U
<b>MindX Blood Test- Pain</b>	MindX Sciences	0290U
<b>MindX Blood Test- Stress</b>	MindX Sciences	0292U
<b>MindX Blood Test- Suicidality</b>	MindX Sciences	0293U
<b>Mind.Px</b>	Mindera	0258U
<b>Molecular Microscope MMDx Heart Test</b>	Kashi Clinical Labs	0087U
<b>Molecular Microscope MMDx Kidney Test</b>	Kashi Clinical Labs	0088U
<b>mRNA Cancer Detect</b>	Viome Life Sciences	0296U
<b>Oncotype DX Colon Cancer</b>	Genomic Health	None
<b>Oncuria Detect, Monitor, and Predict</b>	DiaCarta Clinical Lab	0365U, 0366U, 0367U
<b>Optic Atrophy Panel</b>	Blueprint Genetics	None
<b>PancaGen test</b>	Interpace Diagnostics	None
<b>Percepta Genomic Sequencing Classifier</b>	Veracyte Inc	None
<b>Peripheral Neuropathy Genetics Panel</b>	Mayo Clinic Laboratories	None
<b>Praxis Somatic Transcriptome</b>	Praxis Genomics	0298U
<b>Praxis Transcriptome</b>	Praxis Genomics	0266U
<b>+RNAinsight for CancerNext</b>	Ambry Genetics	0134U
<b>+RNAingight for ATM</b>	Ambry Genetics	0136U
<b>Tempus xT Gene Panel</b>	Tempus	None
<b>Tissue of Origin (TOO)</b>	Cancer Genetics Inc.	None
<b>Tuteva</b>	Verici Dx	0320U
<b>Versiti congenital Neutropenia Panel</b>	Versiti Diagnostic Laboratories	0271U
<b>Vita Risk</b>	Arctic Medical Laboratories	0205U

Link to [Evidence Summary](#)

## POLICY CROSS REFERENCES

- [Genetic and Molecular Testing](#), MP215
- [Genetic Counseling](#), MP316
- [Genetic Testing: CADASIL Disease](#), MP238

- [Genetic Testing: Cytochrome \*P450\* and \*VKORC1\* Polymorphisms](#), MP313
- [Genetic Testing: Gene Expression Profile Testing for Breast Cancer](#), MP47
- [Genetic Testing: Hereditary Breast and Ovarian Cancer](#), MP143
- [Genetic Testing: Inherited Susceptibility to Colorectal Cancer](#), MP115
- [Genetic Testing: Inherited Thrombophilias](#), MP266
- [Genetic Testing: \*MTHFR\*](#), MP311
- [Genetic Testing: Myeloproliferative Diseases](#), MP72
- [Genetic Testing: Reproductive Planning and Prenatal Testing](#), MP78
- [Genetic Testing: Whole Exome, Whole Genome and Proteogenomic Testing](#), MP219

The full Company portfolio of current Medical Policies is available online and can be [accessed here](#).

## POLICY GUIDELINES

### DOCUMENTATION REQUIREMENTS

In order to determine the clinical utility of a genetic test, the following documentation must be provided at the time of the request:

- Name of the panel test or the name of the gene(s) and/or components of the test
- Name of laboratory that performed or is performing the test
- Clinical notes should include the following:
  - Reason for performing test, including the suspected condition
  - Signs/symptoms/test results related to rationale for genetic testing
  - Family history, if applicable
  - How test results will impact clinical decision making
- CPT codes billed

### BACKGROUND

Genetic panel tests are genetic tests that may be comprised of as few as three genes to as many as thousands of genes. The advantage of genetic panel tests is that they allow for simultaneous testing of test of multiple genes and/or mutations, potentially improving the scope and efficiency of a patient's genetic evaluation. One major disadvantage of genetic panel tests is that the results may provide information on genetic mutations that are of unclear clinical significance, or which would not lead to changes in patient management. These results may potentially cause harm by leading to additional unnecessary interventions and anxiety that would not otherwise be considered based on the patient's clinical presentation and/or family history.

Numerous commercially available genetic panel tests are available for diagnostic, prognostic and management purposes for individuals harboring symptoms of hereditary conditions or oncologic indications. In addition, panel tests have also been marketed for risk assessment and screening purposes in asymptomatic individuals. However, high-quality studies published in peer-reviewed literature have only shown that certain genetic panel tests are valuable when diagnosing conditions, conferring risk or guiding treatment. To date, the majority of genetic panel tests have not been well studied.

This policy lists a number of genetic panel tests where there is insufficient evidence in published peer-reviewed literature to indicate that they consistently lead to improved diagnostic rates and/or health outcomes. These tests are considered not medically necessary.

## **REGULATORY STATUS**

### **U.S. FOOD AND DRUG ADMINISTRATION (FDA)**

Approval or clearance by the Food and Drug Administration (FDA) does not in itself establish medical necessity or serve as a basis for coverage. Therefore, this section is provided for informational purposes only.

#### **General Principles of Genetic Testing**

Due to the high complexity of genetic panel tests and their interpretation, tests must be Food and Drug Administration (FDA)-approved and/or performed in a Clinical Laboratory Improvement Amendments (CLIA)-accredited laboratory. Furthermore, the laboratory offering a panel test must have scientifically validated the panel test for the indication for which the panel has been developed and is being requested.

## **CLINICAL EVIDENCE AND LITERATURE REVIEW**

### **EVIDENCE REVIEW**

The panels addressed in this policy underwent a focused review using the GeneReviews, ECRI, Hayes, and NIH Genetic and Rare Diseases (GARD) databases as well as information extracted from the testing laboratory's website.

The main criterion for inclusion in this policy was the limited evidence of clinical utility for every gene or test component of a specific genetic panel test. (Please see Policy Guidelines section above for definition of clinical utility.)

### **CLINICAL PRACTICE GUIDELINES**

#### **American Society of Clinical Oncology (ASCO)**

The 2015 update of a policy statement on genetic and genomic testing for cancer susceptibility from the American Society of Clinical Oncology (ASCO) addressed multigene panel testing and stated the following:<sup>1</sup>

“ASCO recognizes that concurrent multigene testing (ie, panel testing) *may be efficient* in circumstances that require evaluation of multiple high-penetrance genes of established clinical utility as possible explanations for a patient's personal or family history of cancer. Depending on the specific genes included on the panel employed, panel testing may also identify mutations in genes associated with moderate or low cancer risks and mutations in high-penetrance genes that would not have been evaluated on the basis of the presenting personal or family history. Multigene panel

testing will also identify variants of uncertain significance (VUSs) in a substantial proportion of patient cases, simply as a result of the multiplicity of genes tested. ASCO affirms that it is sufficient for cancer risk assessment to evaluate genes of established clinical utility that are suggested by the patient's personal and/or family history. Because of the current uncertainties and knowledge gaps, providers with particular expertise in cancer risk assessment should be involved in the ordering and interpretation of multigene panels that include genes of uncertain clinical utility and genes not suggested by the patient's personal and/or family history...”

In addition, ASCO stated:

“So far, there is little consensus as to which genes should be included on panels offered for cancer susceptibility testing- this heterogeneity presents a number of challenges. All panels include high-penetrance genes that are known to cause autosomal-dominant predisposition syndromes, but often include genes that are not necessarily linked to the disease for which the testing is being offered. There is uncertainty regarding the appropriate risk estimates and management strategies for families with unexpected mutations in high-penetrance genes when there is no evidence of the associated syndrome. Clinical utility remains the fundamental issue with respect to testing for mutations in moderate penetrance genes. It is not yet clear whether clinical management should change based on the presence or absence of a mutation. There is insufficient evidence at the present time to conclusively demonstrate the clinical utility of testing for moderate-penetrance mutations, and no guidelines exist to assist oncology providers.

... [A] substantial proportion of tests identify [variants of uncertain significance] VUS in one or more genes. VUSs are alterations in the genetic code that may or may not affect the function of the protein. VUSs are more common in broad-panel testing both because of the number of genes tested and because of the limited understanding of the range of normal variation in some of these genes. It is usually inappropriate to change the clinical management of a patient based on the finding of a VUS. Unfortunately, there is some evidence that clinicians may overinterpret VUSs and make recommendations that should be reserved for individuals with clearly deleterious mutations.”

## EVIDENCE SUMMARY

There is insufficient evidence that the genetic panels listed in this policy have proven clinical utility. Specifically, there is insufficient evidence that all genes and/or components in a given genetic panel test have proven to provide actionable risk, diagnostic or prognostic information, or information impacting medical management, that has led to improved health outcomes.

## BILLING GUIDELINES AND CODING

CODES*		
CPT	0012M	Oncology (urothelial), mRNA, gene expression profiling by real-time quantitative PCR of five genes (MDK, HOXA13, CDC2 [CDK1], IGFBP5, and XCR2), utilizing urine, algorithm reported as a risk score for having urothelial carcinoma
	0013M	Oncology (urothelial), mRNA, gene expression profiling by real-time quantitative PCR of five genes (MDK, HOXA13, CDC2 [CDK1], IGFBP5, and CXCR2), utilizing urine, algorithm reported as a risk score for having recurrent urothelial carcinoma

0087U	Cardiology (heart transplant), mRNA gene expression profiling by microarray of 1283 genes, transplant biopsy tissue, allograft rejection and injury algorithm reported as a probability score
0088U	Transplantation medicine (kidney allograft rejection), microarray gene expression profiling of 1494 genes, utilizing transplant biopsy tissue, algorithm reported as a probability score for rejection
0134U	Hereditary pan cancer (eg, hereditary breast and ovarian cancer, hereditary endometrial cancer, hereditary colorectal cancer), targeted mRNA sequence analysis panel (18 genes) (List separately in addition to code for primary procedure)
0136U	ATM (ataxia telangiectasia mutated) (eg, ataxia telangiectasia) mRNA sequence analysis (List separately in addition to code for primary procedure)
0175U	Psychiatry (eg, depression, anxiety), genomic analysis panel, variant analysis of 15 genes
0205U	Ophthalmology (age-related macular degeneration), analysis of 3 gene variants (2 CFH gene, 1 ARMS2 gene), using PCR and MALDI-TOF, buccal swab, reported as positive or negative for neovascular age-related macular-degeneration risk associated with zinc supplements
0258U	Autoimmune (psoriasis), mRNA, next-generation sequencing, gene expression profiling of 50-100 genes, skin-surface collection using adhesive patch, algorithm reported as likelihood of response to psoriasis biologics
0266U	Unexplained constitutional or other heritable disorders or syndromes, tissue-specific gene expression by whole-transcriptome and next-generation sequencing, blood, formalin-fixed paraffin-embedded (FFPE) tissue or fresh frozen tissue, reported as presence or absence of splicing or expression changes
0271U	Hematology (congenital neutropenia), genomic sequence analysis of 24 genes, blood, buccal swab, or amniotic fluid
0288U	Oncology (lung), mRNA, quantitative PCR analysis of 11 genes (BAG1, BRCA1, CDC6, CDK2AP1, ERBB3, FUT3, IL11, LCK, RND3, SH3BGR, WNT3A) and 3 reference genes (ESD, TBP, YAP1), formalin-fixed paraffin-embedded (FFPE) tumor tissue, algorithmic interpretation reported as a recurrence risk score
0289U	Neurology (Alzheimer disease), mRNA, gene expression profiling by RNA sequencing of 24 genes, whole blood, algorithm reported as predictive risk score
0290U	Pain management, mRNA, gene expression profiling by RNA sequencing of 36 genes, whole blood, algorithm reported as predictive risk score
0291U	Psychiatry (mood disorders), mRNA, gene expression profiling by RNA sequencing of 144 genes, whole blood, algorithm reported as predictive risk score
0292U	Psychiatry (stress disorders), mRNA, gene expression profiling by RNA sequencing of 72 genes, whole blood, algorithm reported as predictive risk score
0293U	Psychiatry (suicidal ideation), mRNA, gene expression profiling by RNA sequencing of 54 genes, whole blood, algorithm reported as predictive risk score
0294U	Longevity and mortality risk, mRNA, gene expression profiling by RNA sequencing of 18 genes, whole blood, algorithm reported as predictive risk score
0296U	Oncology (oral and/or oropharyngeal cancer), gene expression profiling by RNA sequencing at least 20 molecular features (eg, human and/or microbial mRNA), saliva, algorithm reported as positive or negative for signature associated with malignancy



0298U	Oncology (pan tumor), whole transcriptome sequencing of paired malignant and normal RNA specimens, fresh or formalin-fixed paraffin-embedded (FFPE) tissue, blood or bone marrow, comparative sequence analyses and expression level and chimeric transcript identification
0315U	Oncology (cutaneous squamous cell carcinoma), mRNA gene expression profiling by RT-PCR of 40 genes (34 content and 6 housekeeping), utilizing formalin-fixed paraffin-embedded (FFPE) tissue, algorithm reported as a categorical risk result (ie, Class 1, Class 2A, Class 2B)
0319U	Nephrology (renal transplant), RNA expression by select transcriptome sequencing, using pretransplant peripheral blood, algorithm reported as a risk score for early acute rejection
0320U	Nephrology (renal transplant), RNA expression by select transcriptome sequencing, using posttransplant peripheral blood, algorithm reported as a risk score for acute cellular rejection
0321U	Infectious agent detection by nucleic acid (DNA or RNA), genitourinary pathogens, identification of 20 bacterial and fungal organisms and identification of 16 associated antibiotic-resistance genes, multiplex amplified probe technique
0323U	Infectious agent detection by nucleic acid (DNA and RNA), central nervous system pathogen, metagenomic next-generation sequencing, cerebrospinal fluid (CSF), identification of pathogenic bacteria, viruses, parasites, or fungi
0332U	Oncology (pan-tumor), genetic profiling of 8 DNA-regulatory (epigenetic) markers by quantitative polymerase chain reaction (qPCR), whole blood, reported as a high or low probability of responding to immune checkpoint-inhibitor therapy
0363U	Oncology (urothelial), mRNA, geneexpression profiling by real-time quantitative PCR of 5 genes (MDK, HOXA13, CDC2 [CDK1], IGFBP5, and CXCR2), utilizing urine, algorithm incorporates age, sex, smoking history, and macrohematuria frequency, reported as a risk score for having urothelial carcinoma
0365U	Oncology (bladder), analysis of 10 protein biomarkers (A1AT, ANG, APOE, CA9, IL8, MMP9, MMP10, PAI1, SDC1 and VEGFA) by immunoassays, urine, algorithm reported as a probability of bladder cancer
0366U	Oncology (bladder), analysis of 10 protein biomarkers (A1AT, ANG, APOE, CA9, IL8, MMP9, MMP10, PAI1, SDC1 and VEGFA) by immunoassays, urine, algorithm reported as a probability of recurrent bladder cancer
0367U	Oncology (bladder), analysis of 10 protein biomarkers (A1AT, ANG, APOE, CA9, IL8, MMP9, MMP10, PAI1, SDC1 and VEGFA) by immunoassays, urine, diagnostic algorithm reported as a risk score for probability of rapid recurrence of recurrent or persistent cancer following transurethral resection
0420U	Oncology (urothelial), mRNA expression profiling by real-time quantitative PCR of MDK, HOXA13, CDC2, IGFBP5, and CXCR2 in combination with droplet digital PCR (ddPCR) analysis of 6 single-nucleotide polymorphisms (SNPs) genes TERT and FGFR3, urine, algorithm reported as a risk score for urothelial carcinoma
0423U	Psychiatry (eg, depression, anxiety), genomic analysis panel, including variant analysis of 26 genes, buccal swab, report including metabolizer status and risk of drug toxicity by condition
0437U	Psychiatry (anxiety disorders), mRNA, gene expression profiling by RNA sequencing of 15 biomarkers, whole blood, algorithm reported as predictive risk score

81228	Cytogenomic (genome-wide) analysis for constitutional chromosomal abnormalities; interrogation of genomic regions for copy number variants, comparative genomic hybridization [CGH] microarray analysis
81229	Cytogenomic (genome-wide) analysis for constitutional chromosomal abnormalities; interrogation of genomic regions for copy number and single nucleotide polymorphism variants, comparative genomic hybridization [CGH] microarray analysis
81301	Microsatellite instability analysis (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) of markers for mismatch repair deficiency (e.g., BAT25, BAT26), includes comparison of neoplastic and normal tissue, if performed
81320	PLCG2 (phospholipase C gamma 2) (eg, chronic lymphocytic leukemia) gene analysis, common variants (eg, R665W, S707F, L845F)
81400	Molecular pathology procedure, Level 1 (e.g., identification of single germline variant [e.g., SNP] by techniques such as restriction enzyme digestion or melt curve analysis)
81401	Molecular pathology procedure, Level 2 (e.g., 2-10 SNPs, 1 methylated variant, or 1 somatic variant [typically using nonsequencing target variant analysis], or detection of a dynamic mutation disorder/triplet repeat)
81402	Molecular pathology procedure, level 3 (e.g., >10 SNPs, 2-10 methylated variants, or 2-10 somatic variants [typically using non-sequencing target variant analysis], immunoglobulin and T-cell receptor gene rearrangements, duplication/deletion variants 1 exon)
81403	Molecular pathology procedure, level 4 (e.g. analysis of single exon by DNA sequence analysis, analysis of >10 amplicons using multiplex PCR in 2 or more independent reactions, mutation scanning or duplication/deletion variants of 2-5 exons)
81404	Molecular pathology procedure, level 5 (e.g., 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)
81405	Molecular pathology procedure, level 6 (e.g., analysis of 6-10 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of 11-25 exons)
81406	Molecular pathology procedure, Level 7 (e.g., analysis of 11-25 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of 26-50 exons, cytogenomic array analysis for neoplasia)
81407	Molecular pathology procedure, level 8 (e.g., analysis of 26-50 exons by DNA sequence analysis, mutation scanning or duplication/deletion variants of >50 exons, sequence analysis of multiple genes on one platform)
81408	Molecular pathology, level 9 (e.g., analysis of >50 exons in a single gene by DNA sequence analysis)
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

81413	Cardiac ion channelopathies (eg, Brugada syndrome, long QT syndrome, short QT syndrome, catecholaminergic polymorphic ventricular tachycardia); genomic sequence analysis panel, must include sequencing of at least 10 genes, including ANK2, CASQ2, CAV3, KCNE1, KCNE2, KCNH2, KCNJ2, KCNQ1, RYR2, and SCN5A
81414	Cardiac ion channelopathies (eg, Brugada syndrome, long QT syndrome, short QT syndrome, catecholaminergic polymorphic ventricular tachycardia); duplication/deletion gene analysis panel, must include analysis of at least 2 genes, including KCNH2 and KCNQ1
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)
81434	Hereditary retinal disorders (eg, retinitis pigmentosa, Leber congenital amaurosis, cone-rod dystrophy), genomic sequence analysis panel, must include sequencing of at least 15 genes, including ABCA4, CNGA1, CRB1, EYS, PDE6A, PDE6B, PRPF31, PRPH2, RDH12, RHO, RP1, RP2, RPE65, RPGR, and USH2A
81437	Hereditary neuroendocrine tumor disorders (eg, medullary thyroid carcinoma, parathyroid carcinoma, malignant pheochromocytoma or paraganglioma); genomic sequence analysis panel, must include sequencing of at least 6 genes, including MAX, SDHB, SDHC, SDHD, TMEM127, and VHL
81438	Hereditary neuroendocrine tumor disorders (eg, medullary thyroid carcinoma, parathyroid carcinoma, malignant pheochromocytoma or paraganglioma); duplication/deletion analysis panel, must include analyses for SDHB, SDHC, SDHD, and VHL
81439	Hereditary cardiomyopathy (eg, hypertrophic cardiomyopathy, dilated cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy), genomic sequence analysis panel, must include sequencing of at least 5 cardiomyopathy-related genes (eg, DSG2, MYBPC3, MYH7, PKP2, TTN)
81442	Noonan spectrum disorders (eg, Noonan syndrome, cardio-facio-cutaneous syndrome, Costello syndrome, LEOPARD syndrome, Noonan-like syndrome), genomic sequence analysis panel, must include sequencing of at least 12 genes, including BRAF, CBL, HRAS, KRAS, MAP2K1, MAP2K2, NRAS, PTPN11, RAF1, RIT1, SHOC2, and SOS1
81443	Genetic testing for severe inherited conditions (eg, cystic fibrosis, Ashkenazi Jewish-associated disorders [eg, Bloom syndrome, Canavan disease, Fanconi anemia type C, mucopolidosis type VI, Gaucher disease, Tay-Sachs disease], beta hemoglobinopathies, phenylketonuria, galactosemia), 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)
81448	Hereditary peripheral neuropathies (eg, Charcot-Marie-Tooth, spastic paraplegia), genomic sequence analysis panel, must include sequencing of at least 5 peripheral

		neuropathy-related genes (eg, BSCL2, GJB1, MFN2, MPZ, REEP1, SPAST, SPG11, SPTLC1)
	81479	Unlisted Molecular Pathology
	81504	Oncology (tissue of origin), microarray gene expression profiling of > 2000 genes, utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as tissue similarity scores
	81525	Oncology (colon), mRNA, gene expression profiling by real-time RT-PCR of 12 genes (7 content and 5 housekeeping), utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a recurrence score
	81540	Oncology (tumor of unknown origin), mRNA, gene expression profiling by real-time RT-PCR of 92 genes (87 content and 5 housekeeping) to classify tumor into main cancer type and subtype, utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a probability of a predicted main cancer type and subtype
	81599	Unlisted multianalyte assay with algorithmic analysis
	84999	Unlisted chemistry procedure
<b>HCPCS</b>	S3844	DNA analysis of the connexin 26 gene (GJB2) for susceptibility to congenital, profound deafness
	S3870	Comparative genomic hybridization (cgh) microarray testing for developmental delay, autism spectrum disorder and/or intellectual disability

**\*Coding Notes:**

- The above code list is provided as a courtesy and may not be all-inclusive. Inclusion or omission of a code from this policy neither implies nor guarantees reimbursement or coverage. Some codes may not require routine review for medical necessity, but they are subject to provider contracts, as well as member benefits, eligibility and potential utilization audit.
- All unlisted codes are reviewed for medical necessity, correct coding, and pricing at the claim level. If an unlisted code is submitted for non-covered services addressed in this policy then it will be **denied as not covered**. If an unlisted code is submitted for potentially covered services addressed in this policy, to avoid post-service denial, **prior authorization is recommended**.
- **See the non-covered and prior authorization lists on the Company [Medical Policy, Reimbursement Policy, Pharmacy Policy and Provider Information website](#) for additional information.**
- HCPCS/CPT code(s) may be subject to National Correct Coding Initiative (NCCI) procedure-to-procedure (PTP) bundling edits and daily maximum edits known as “medically unlikely edits” (MUEs) published by the Centers for Medicare and Medicaid Services (CMS). This policy does not take precedence over NCCI edits or MUEs. Please refer to the CMS website for coding guidelines and applicable code combinations.

## REFERENCES

1. Robson ME, Bradbury AR, Arun B, et al. American Society of Clinical Oncology Policy Statement Update: Genetic and Genomic Testing for Cancer Susceptibility. *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*. 2015;33(31):3660-3667.

## POLICY REVISION HISTORY

DATE	REVISION SUMMARY
2/2023	Converted to new policy template.
4/2023	Q2 2023 Code set update

7/2023	Annual review. Panels and codes already addressed on another policy removed and criteria denial changed from investigational to not medically necessary
10/2023	Q4 code set update. Revised code
12/2023	Annual update. List of non-covered panels updated.
1/2024	Q1 2024 code set update