PriorityHealth

MEDICAL POLICY
No. 91540-R15

GENETICS: COUNSELING, TESTING, SCREENING

Effective Date: August 31, 2018	**Review Dates: 8/07, 10/07, 8/08, 8/09, 10/09, 2/10, 8/10, 8/11, 10/11, 10/12, 10/13, 11/14, 11/15, 11/16, 11/17, 5/18, 11/18**
Date Of Origin: August 8, 2007	**Status: Current**

Summary of Changes

Additions:

Pg. 4, Section I, P and Q, added criteria related to Rapid Whole Genome Sequencing

I. POLICY/CRITERIA

A. Coverage for **genetic counseling, testing and/or screening** is provided to Priority Health members when **all** of the following apply:

1. Appropriate genetic counseling occurs before and after testing*.
2. Documented informed consent occurs before testing**.
3. Prior authorization is obtained as defined in B below.

*Members must have genetic counseling by a genetic counselor **before** testing can occur for certain conditions (see appendix A below). Counseling can occur at the same visit as the sample(s) for testing are collected with appropriate documentation as defined above. Genetic Counseling must be performed by a board certified genetic counselor that is independent of the laboratory performing the requested testing.

** Health care practitioners in the State of Michigan must follow state law regarding informed consent for predictive genetic testing. (Michigan State Law. 333.17020 Genetic test; informed consent @ http://legislature.mi.gov/doc.aspx?mcl-333-17020).

B. **Limits/Indications/Authorization**

Selected tests require prior authorization administered through eviCore. Refer to Section V, Coding Information, of this policy for specific prior authorization requirements by CPT code. See Appendix A below for a list of specific conditions for which genetic counseling is required and/or recommended.

C. **Prenatal Testing**

1. Non-invasive prenatal testing (NIPT) for fetal aneuploidies trisomy 21, 13 and 18 using tests that analyze circulating cell-free DNA extracted from a maternal blood sample is covered when appropriate genetic counseling occurs prior to testing and eviCore guidelines are met.
2. Prenatal diagnostic chromosomal or cytogenetic testing (via amniocentesis or chorionic villus sampling) will be covered for pregnant women when the member has received genetic counseling by a genetic counselor, the reason for

testing is documented, and the testing is ordered by a Family Practice physician providing OB services or by an Obstetrician. Common indications for prenatal diagnosis include but are not limited to:
   a. Abnormal fetal ultrasound findings
   b. Abnormal maternal serum first trimester screening, second trimester triple or quad screen, integrated* or alpha-fetoprotein, elevated MSAFP
   c. Increased risk based on documented family history or carrier status
3. Prenatal diagnostic chromosomal or cytogenetic testing is ***not*** a covered benefit for:
   a. Sex determination unless medically indicated
   b. Prenatal determination of paternity
   c. Preconceptual testing of sperm, ova, embryos for use in assisted reproduction (e.g. artificial insemination, IVF)

D. **Genetic Carrier Screening** may be covered according to eviCore guidelines**.**

E. **Suspected Genetic Conditions/ Diagnostic testing** may be covered according to eviCore guidelines.

F. **Prognostic Testing** may be covered according to eviCore guidelines.

G**. Predictive Genetic Testing** may be covered according to eviCore guidelines.

H. **Preimplantation Genetic Diagnosis (PGD):** Preimplantation genetic diagnosis (PGD), including the oocyte polar body or cleavage stage embryo biopsy procedure, associated genetic testing, and pre- and post-test genetic counseling associated with PGD, may be covered according to eviCore guidelines.

I. **Gene Expression Analysis** may be covered according to eviCore guidelines.

J. **Chemosensitivity Assays** are considered experimental and investigational and not a covered benefit.

K**. Multi-Marker Tumor Panels**-*see policy "Multi-Marker Tumor Panels 91609"*

L**. Pharmacogenomic Testing**

In general pharmacogenetic testing (e. g., genotyping, mutation analysis) is only considered to be medically necessary when the following criteria are met (this list may not be all inclusive):

1. The individual is a candidate for a targeted drug therapy associated with a specific gene biomarker or gene mutation.
2. The results of the pharmacogenetic test will directly impact clinical decision-making AND clinical outcome for the individual.

3. The testing method is considered to be scientifically valid to identify the specific gene biomarker or gene mutation.
4. The testing method has been scientifically proven to show a relationship between a specific gene biomarker or gene mutation and a specific therapeutic drug target.
5. Genetic testing that is specified as a requirement for drug treatment per the FDA is considered medically necessary.

    - **HLA-B*1502** Genotyping for HLA-B*1502 is considered to be medically necessary for persons of Asian ancestry before commencing treatment with carbamazepine (Tegretol). B*1502, an HLA allele is strongly associated with carbamazepine-induced Stevens-Johnson syndrome/toxic epidermal necrolysis in south-east Asians.
    - **HLA-B*5701 for Abacavir hypersensitivity** HLA-B*5701 screening is considered to be medically necessary for persons infected with HIV-1 before commencing treatment with abacavir (Ziagen).
    - **KRAS Mutation Assay** Testing is considered to be medically necessary ONLY prior to initiation of epidermal growth factor receptor (EGFR) inhibitor therapies cetuximab (Erbitux®) and panitumumab (Vectibix®) for the treatment of metastatic colorectal cancer.
    - **EGFR Mutation Analysis** Testing for the presence of a characteristic mutation in the epidermal growth factor receptor (EGFR) is considered to be medically necessary to determine a subset of patients with non-small cell lung cancer (NSCLC) who are likely to have a favorable response to EGFR tyrosine kinase inhibitors (TKIs).

M. Tumor Markers

Serum tumor markers are considered medically necessary for a specific cancer type when proven to be clinically useful in the detection and management (as described in Section IV) of that specific cancer. The utilization of a specific tumor marker must be adopted into a clinical algorithm and endorsed by a professional cancer organization, i.e. NCCN, ASCO, and NCI as part of routine care. Examples of this include the following:

1. Carcinoembryonic antigen (CEA) is considered medically necessary when used to detect asymptomatic recurrence of colorectal cancer after surgical and/or medical treatment for the diagnosis of colorectal cancer but is not considered medically necessary as a screening test for colorectal cancer.

2. Bladder tumor antigen (BTA) Stat test medically necessary in any of the following conditions:
    a. Follow-up of treatment for bladder cancer; *or*
    b. Monitoring for eradication of bladder cancer; *or*
    c. Recurrences after eradication.
    d. BTA Stat test is considered experimental and investigational for screening of bladder cancer and all other indications.

N. Testing of member and non-member relatives:

1. Genetic testing is ***not*** a covered benefit if the test results do not provide direct medical benefit to the member unless it provides direct medical benefit to other relatives that are also Priority Health members and this benefit is documented.
2. Genetic testing of a non-member relative of a member ***may*** be a covered benefit if ***all*** of the criteria in a through e are met:
   a. The test results are for the direct medical benefit of the member and testing the nonplan relative is the most cost effective method to obtain the medically necessary information for the member.
   b. The nonplan relative's insurance company has been billed and payment has been denied.
   c. Coverage is limited to the testing of ***five*** nonplan relatives as a lifetime benefit for a member.
   d. Testing of the non-member relative has been recommended by a genetics counselor ***and*** approved by Priority Health.
   e. All genetic testing must be processed through a Priority Health provider phlebotomist and laboratory, unless otherwise specified by the Genetics Counselor.
3. In the absence of specific information regarding advances in the knowledge of mutation characteristics for a particular disorder, the current literature indicates that genetic tests for inherited disease need only be conducted once per lifetime of the member.

O. Whole Genome Sequencing (WGS), exome sequencing/whole exome sequencing (WES), genome-wide association studies (GWAS), or mitochondrial whole genome analysis (MITO-WGA) conducted in the outpatient setting may be covered according to eviCore guidelines.

P. Rapid Whole Genome Sequencing (rWGS)

rWGS may be a covered benefit if all of the following criteria are met:

1. Ordered after determination by a Board-Certified or Board-Eligible Medical Geneticist that testing could be useful in establishing a diagnosis and treatment options; AND
2. <18 years of age; AND
3. Acutely ill inpatient member either
   a. Tested within 1 week of admission to a hospital; OR
   b. Tested within 1 week of development of an abnormal response to standard therapy for an underlying condition.

Note: Priority Health requires only notification of intent to perform inpatient rapid WGS (insert link to PA form). This submission may occur prior to or in conjunction with testing. The intent is to avoid unnecessary delay to inpatient care.

Q. Exclusions

1. The following are examples of services that are not covered:
   a. Routine, ongoing, or long term genetic counseling.
   b. Genetic testing to determine the paternity of a child.
   c. Genetic testing to determine the sex of the child.
   d. General population screening for genetic disorders (e.g., cystic fibrosis).
   e. rWGS for inpatients members whose clinical course is entirely explained by but not limited to:
      i. Infection or sepsis with normal response to therapy
      ii. Isolated prematurity
      iii. Isolated transient neonatal tachypnea
      iv. Isolated unconjugated hyperbilirubinemia
      v. Hypoxic ischemic encephalopathy with clear precipitating event
      vi. Meconium aspiration
      vii. Previously confirmed genetic diagnosis that explains their clinical condition (i.e. have a positive genetic test)
      viii. Trauma

Special Notes: Informed ***consent*** is ***required*** for all genetic tests in accordance with Michigan law PUBLIC HEALTH CODE (EXCERPT)Act 368 of 1978: 333.17020 Genetic test; informed consent Sec. 17020

II. MEDICAL NECESSITY REVIEW

☒ Selected tests require prior authorization. Refer to Section V, Coding Information, for specific prior authorization requirements for testing by CPT code.

☒ All tests performed at non-participating laboratories will require prior authorization for all products.

This policy reflects the recommendations of the Technology Assessment Committee reviews completed March 3, 2006, June 9, 2006, September 9, 2011, and September 10, 2018.

III. APPLICATION TO PRODUCTS:

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

- **HMO/EPO:** ***This policy applies to insured HMO/EPO plans.***
- **POS:** ***This policy applies to insured POS plans.***
- **PPO:** ***This policy applies to insured PPO plans. Consult individual plan documents as state mandated benefits may apply. If there is a conflict between this policy and a plan document, the provisions of the plan document will govern.***

- **ASO:** ***For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern.***
- **INDIVIDUAL:** ***For individual policies, consult the individual insurance policy. If there is a conflict between this medical policy and the individual insurance policy document, the provisions of the individual insurance policy will govern.***
- **MEDICARE:** ***Coverage is determined by the Centers for Medicare and Medicaid Services (CMS); if a coverage determination has not been adopted by CMS, this policy applies.***
- **MEDICAID/HEALTHY MICHIGAN PLAN:** ***For Medicaid/Healthy Michigan Plan members, this policy will apply. Coverage is based on medical necessity criteria being met and the appropriate code(s) from the coding section of this policy being included on the Michigan Medicaid Fee Schedule located at: http://www.michigan.gov/mdch/0,1607,7-132-2945_42542_42543_42546_42551-159815--,00.html. If there is a discrepancy between this policy and the Michigan Medicaid Provider Manual located at: http://www.michigan.gov/mdch/0,1607,7-132-2945_5100-87572--,00.html, the Michigan Medicaid Provider Manual will govern. For Medical Supplies/DME/Prosthetics and Orthotics, please refer to the Michigan Medicaid Fee Schedule to verify coverage.***

IV. DESCRIPTION

A. Genetic Counseling* Genetic counseling is the process of helping people understand and adapt to the medical, psychological and familial implications of genetic contributions to disease. This process integrates the following:

1. Interpretation of family and medical histories to assess the chance of disease occurrence or recurrence.
2. Education about inheritance, testing, management, prevention, resources and research.
3. Counseling to promote informed choices and adaptations to the risk or condition.
4. Discussion of the ethical and legal aspects of autonomy, privacy, equity and confidentiality as applied to each individual seeking genetic testing.
5. Psychosocial aspects should be addressed during the pre-test and post-test counseling session surrounding any genetic testing.

**Journal of Genetic Counseling, Vol. 15, April 2006*

Genetic counselors are defined by the plan as American Board of Medical Genetics or American Board of Genetic Counseling certified physicians or masters or doctorate level-trained genetic counseling professionals who have received formal training in genetics and genetic counseling from an accredited institution. It is the genetic counselor's or physician specialist's role to provide information to the individual or family regarding the genetic disorder that will allow them to make an informed decision.

B. Genetic Testing. A genetic test is the analysis of human DNA, RNA, chromosomes, proteins, or certain metabolites in order to detect alterations related to a heritable or acquired disorder. This can be accomplished by directly examining the DNA or RNA that makes up a gene (direct testing), looking at markers co-inherited with a disease-causing gene (linkage testing), assaying certain metabolites (biochemical

testing), or examining the chromosomes (cytogenetic testing). Clinical genetic tests are those in which specimens are examined and results reported to the provider or patient for the purpose of diagnosis, prevention or treatment in the care of individual patients.

C. Genetic Screening refers to examining the genes and/or gene products of phenotypically normal or otherwise people to see if they are carriers of an abnormal gene. Carriers usually do not themselves have symptoms related to the gene mutation. Carrier testing is offered to individuals who have family members with a genetic condition, family members of an identified carrier, and individuals in ethnic or racial groups known to have a higher carrier rate for a particular condition.

D. Definitions:

Whole genome sequencing (WGS), also known as full genome sequencing (FGS), complete genome sequencing, or entire genome sequencing is a laboratory procedure which seeks to determine an individual's entire DNA sequence, specifying the order of every base pair within the genome at a single time. Rapid whole genome sequencing (rWGS) is a high speed form of WGS which shortens the time of genome analysis. The relationship between mutations in the genomic material of asymptomatic individuals and the development of specific diseases is still being analyzed and the role of whole-genome sequencing in the clinical setting has yet to be established.

Exome sequencing, also referred to as whole exome sequencing or WES, is an alternative to WGS. It is laboratory process to determine the sequence of the protein coding regions of the genome. The exome is the part of the genome that encodes protein, where roughly 85 percent of variants are known to contribute to diseases in humans. Exome sequencing has been proposed as a diagnostic method to identify these genetic variants in patients not diagnosed by traditional diagnostic and genetic testing approaches

Genome-wide association studies (GWAS), also referred to as genome-wide analysis, and is a method of identifying genes involved in human disease by comparing the genome of individuals with a disease or condition to the genome of individuals without the disease or condition. GWAS are performed using microarrays to search the genome for small variations, called single nucleotide polymorphisms (SNPs, pronounced "snips"), that occur more often in individuals with a specific disorder than in those who do not have a disorder.

Mitochondrial Whole Genome Analysis (MITO-WGA) Mitochondrial disease represents a heterogeneous group of conditions with the same etiology: a mutation which impairs the function of the mitochondrial electron transport chain. Dysfunction of the mitochondria can cause any of a variety of conditions and symptoms: progressive external opthalmoplegia, optic atrophy, retinitis pigmentosa,

proximal myopathy, exercise intolerance, sensorineural deafness, encephalopathy, seizures, and ataxia

V. CODING INFORMATION

Diagnosis Codes that may support medical necessity
Not specified

CPT/HCPCS Codes *that may be covered if criteria met:*
(Coverage information for Medicare subject to change; Consult LCD's, NCD's for current Medicare coverage)

Genetic Counseling

96040	Medical genetics and genetic counseling services, each 30 minutes face-to-face with patient/family
S0265	Genetic counseling, under physician supervision, each 15 minutes

KEY

eC PA Prior authorization (PA) through eviCore required (or Priority Health if noted)

Review in Panels Code is covered without prior authorization required but may be requested for PA if reported with codes that do require PA such as multi-test panels that are not otherwise reported with a single code. (*All procedure codes (81105-81599) included in a multiple procedure code panel are subject to medical necessity review if any code requires prior authorization)* The procedure requiring PA is the code that should initiate access to eviCore via the provider portal.

OOS Out of Scope for eviCore management. One of the following may apply
OOS - Not Covered Code is not covered for Priority Health members
OOS - No PA Code is covered for In Network Providers without PA but is not managed by eviCore. Out of Network providers should submit PA requests to Priority Health via FAX form

Not Covered Code is not covered for one or more business categories (Commercial, Medicaid, and Medicare). Procedures that are not covered do not require PA but voluntary auth requests may be submitted for a non-coverage determination

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
81105	Human Platelet Antigen 1 genotyping (HPA-1), ITGB3 (integrin, beta 3 [platelet glycoprotein IIIa], antigen CD61 [GPIIIa]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-1a/b (L33P)		Review in panels	Review in panels	Review in panels

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
81106	Human Platelet Antigen 2 genotyping (HPA-2), GP1BA (glycoprotein Ib [platelet], alpha polypeptide [GPIba]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-2a/b (T145M)		Review in panels	Review in panels	Review in panels
81107	Human Platelet Antigen 3 genotyping (HPA-3), ITGA2B (integrin, alpha 2b [platelet glycoprotein IIb of IIb/IIIa complex], antigen CD41 [GPIIb]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-3a/b (I843S)		Review in panels	Review in panels	Review in panels
81108	Human Platelet Antigen 4 genotyping (HPA-4), ITGB3 (integrin, beta 3 [platelet glycoprotein IIIa], antigen CD61 [GPIIIa]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-4a/b (R143Q)		Review in panels	Review in panels	Review in panels
81109	Human Platelet Antigen 5 genotyping (HPA-5), ITGA2 (integrin, alpha 2 [CD49B, alpha 2 subunit of VLA-2 receptor] [GPIa]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant (e.g., HPA-5a/b (K505E))		Review in panels	Review in panels	Review in panels
81110	Human Platelet Antigen 6 genotyping (HPA-6w), ITGB3 (integrin, beta 3 [platelet glycoprotein IIIa, antigen CD61] [GPIIIa]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-6a/b (R489Q)		Review in panels	Review in panels	Review in panels
81111	Human Platelet Antigen 9 genotyping (HPA-9w), ITGA2B (integrin, alpha 2b [platelet glycoprotein IIb of IIb/IIIa complex, antigen CD41] [GPIIb]) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-9a/b (V837M)		Review in panels	Review in panels	Review in panels
81112	Human Platelet Antigen 15 genotyping (HPA-15), CD109 (CD109 molecule) (e.g., neonatal alloimmune thrombocytopenia [NAIT], post-transfusion purpura), gene analysis, common variant, HPA-15a/b (S682Y)		Review in panels	Review in panels	Review in panels

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
81120	IDH1 (isocitrate dehydrogenase 1 [NADP+], soluble) (e.g., glioma), common variants (e.g., R132H, R132C)		No PA Required	No PA Required	No PA Required
81121	IDH2 (isocitrate dehydrogenase 2 [NADP+], mitochondrial) (e.g., glioma), common variants (e.g., R140W, R172M)		Review in panels	Review in panels	Review in panels
81161	DMD (dystrophin) (e.g., Duchenne/Becker muscular dystrophy) deletion analysis, and duplication analysis, if performed		Review in panels	Review in panels	Not Covered
81162	BRCA1, BRCA2 (breast cancer 1 and 2) (e.g., hereditary breast and ovarian cancer) gene analysis; full sequence analysis and full duplication/deletion analysis	**BRAC1/2** (Ambry) **BRCAssure** (LabCorp) **BRCAvantage Comprehensive** (Quest) **Integrated BRAC Analysis®** (Myriad)	eC PA	eC PA	eC PA
81163	BRCA1 (BRCA1, DNA repair associated), BRCA2 (BRCA2, DNA repair associated) (e.g., hereditary breast and ovarian cancer) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81164	BRCA1 (BRCA1, DNA repair associated), BRCA2 (BRCA2, DNA repair associated) (e.g., hereditary breast and ovarian cancer) gene analysis; full duplication/deletion analysis (i.e., detection of large gene rearrangements)		eC PA	eC PA	eC PA
81165	BRCA1 (BRCA1, DNA repair associated) (e.g., hereditary breast and ovarian cancer) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81166	BRCA1 (BRCA1, DNA repair associated) (e.g., hereditary breast and ovarian cancer) gene analysis; full duplication/deletion analysis (i.e., detection of large gene rearrangements)		eC PA	eC PA	eC PA
81167	BRCA2 (BRCA2, DNA repair associated) (e.g., hereditary breast and ovarian cancer) gene analysis; full duplication/deletion analysis (i.e., detection of large gene rearrangements)		eC PA	eC PA	eC PA
81170	ABL1 (ABL proto-oncogene 1, non-receptor tyrosine kinase) (e.g., acquired imatinib tyrosine kinase inhibitor resistance), gene analysis, variants in the kinase domain		Review in panels	Review in panels	Review in panels

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
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		Review in panels	Review in panels	Review in panels
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)		Review in panels	Review in panels	Review in panels
81173	AR (androgen receptor) (e.g., spinal and bulbar muscular atrophy, Kennedy disease, X chromosome inactivation) gene analysis; full gene sequence		eC PA	eC PA	eC PA
81174	AR (androgen receptor) (e.g., spinal and bulbar muscular atrophy, Kennedy disease, X chromosome inactivation) gene analysis; known familial variant		eC PA	eC PA	eC PA
81175	ASXL1 (additional sex combs like 1, transcriptional regulator) (e.g., myelodysplastic syndrome, myeloproliferative neoplasms, chronic myelomonocytic leukemia), gene analysis; full gene sequence		Review in panels	Review in panels	Review in panels
81176	ASXL1 (additional sex combs like 1, transcriptional regulator) (e.g., myelodysplastic syndrome, myeloproliferative neoplasms, chronic myelomonocytic leukemia), gene analysis; targeted sequence analysis (e.g., exon 12)		Review in panels	Review in panels	Review in panels
81177	ATN1 (atrophin 1) (e.g., dentatorubral-pallidoluysian atrophy) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81178	ATXN1 (ataxin 1) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81179	ATXN2 (ataxin 2) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81180	ATXN3 (ataxin 3) (e.g., spinocerebellar ataxia, Machado-Joseph disease) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
81181	ATXN7 (ataxin 7) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81182	ATXN8OS (ATXN8 opposite strand [non-protein coding]) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81183	ATXN10 (ataxin 10) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81184	CACNA1A (calcium voltage-gated channel subunit alpha1 A) (e.g., spinocerebellar ataxia) gene analysis; evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81185	CACNA1A (calcium voltage-gated channel subunit alpha1 A) (e.g., spinocerebellar ataxia) gene analysis; full gene sequence		eC PA	eC PA	eC PA
81186	CACNA1A (calcium voltage-gated channel subunit alpha1 A) (e.g., spinocerebellar ataxia) gene analysis; known familial variant		eC PA	eC PA	eC PA
81187	CNBP (CCHC-type zinc finger nucleic acid binding protein) (e.g., myotonic dystrophy type 2) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81188	CSTB (cystatin B) (e.g., Unverricht-Lundborg disease) gene analysis; evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81189	CSTB (cystatin B) (e.g., Unverricht-Lundborg disease) gene analysis; full gene sequence		eC PA	eC PA	eC PA
81190	CSTB (cystatin B) (e.g., Unverricht-Lundborg disease) gene analysis; known familial variant(s)		eC PA	eC PA	eC PA
81200	ASPA (aspartoacylase) (e.g., Canavan disease) gene analysis, common variants (e.g., E285A, Y231X)		Review in panels	Review in panels	Not Covered
81201	APC (adenomatous polyposis coli) (e.g., familial adenomatosis polyposis [FAP], attenuated FAP) gene analysis; full gene sequence		eC PA	eCPA	eC PA
81202	APC (adenomatous polyposis coli) (e.g., familial adenomatosis polyposis [FAP], attenuated FAP) gene analysis; known familial variants		eC PA	eC PA	Not Covered

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
81203	APC (adenomatous polyposis coli) (e.g., familial adenomatosis polyposis [FAP], attenuated FAP) gene analysis; duplication/deletion variants		eC PA	eCPA	eC PA
81204	AR (androgen receptor) (e.g., spinal and bulbar muscular atrophy, Kennedy disease, X chromosome inactivation) gene analysis; characterization of alleles (e.g., expanded size or methylation status)		Review in panels	Review in panels	Review in panels
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)		Review in panels	Review in panels	Not Covered
81206	BCR/ABL1 (t(9;22)) (e.g., chronic myelogenous leukemia) translocation analysis; major breakpoint, qualitative or quantitative		Review in panels	Review in panels	Review in panels
81207	BCR/ABL1 (t(9;22)) (e.g., chronic myelogenous leukemia) translocation analysis; minor breakpoint, qualitative or quantitative		Review in panels	Review in panels	Review in panels
81208	BCR/ABL1 (t(9;22)) (e.g., chronic myelogenous leukemia) translocation analysis; other breakpoint, qualitative or quantitative		Review in panels	Review in panels	Review in panels
81209	BLM (Bloom syndrome, RecQ helicase-like) (e.g., Bloom syndrome) gene analysis, 2281del6ins7 variant		Review in panels	Review in panels	Not Covered
81210	BRAF RAF proto oncogene, serine/threonine kinase (e.g., colon cancer, melanoma), gene analysis, V600 variant(s)		Review in panels	Review in panels	Review in panels
81212	BRCA1, BRCA2 (breast cancer 1 and 2) (e.g., hereditary breast and ovarian cancer) gene analysis; 185delAG, 5385insC, 6174delT variants		eC PA	eC PA	eC PA
81215	BRCA1 (breast cancer 1) (e.g., hereditary breast and ovarian cancer) gene analysis; known familial variant		eC PA	eC PA	eC PA
81216	BRCA2 (breast cancer 2) (e.g., hereditary breast and ovarian cancer) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81217	BRCA2 (breast cancer 2) (e.g., hereditary breast and ovarian cancer) gene analysis; known familial variant		eC PA	eC PA	eC PA

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
81218	CEBPA (CCAAT/enhancer binding protein [C/EBP], alpha) (e.g., acute myeloid leukemia), gene analysis, full gene sequence		Review in panels	Review in panels	Review in panels
81219	CALR (calreticulin) (e.g., myeloproliferative disorders), gene analysis, common variants in exon 9		Review in panels	Review in panels	Review in panels
81220	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; common variants (e.g., ACMG/ACOG guidelines)		Review in panels	Not Covered	Not Covered
81221	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; known familial variants		eC PA	Not Covered	Not Covered
81222	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; duplication/deletion variants		eC PA	eC PA	Not Covered
81223	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; full gene sequence		eC PA	eC PA	Not Covered
81224	CFTR (cystic fibrosis transmembrane conductance regulator) (e.g., cystic fibrosis) gene analysis; intron 8 poly-T analysis (e.g., male infertility)		Review in panels	Not Covered	Not Covered
81225	CYP2C19 (cytochrome P450, family 2, subfamily C, polypeptide 19) (e.g., drug metabolism), gene analysis, common variants (e.g., *2, *3, *4, *8, *17)		eC PA	eC PA	eC PA
81226	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism), gene analysis, common variants (e.g., *2, *3, *4, *5, *6, *9, *10, *17, *19, *29, *35, *41, *1XN, *2XN, *4XN)		eC PA	eC PA	eC PA
81227	CYP2C9 (cytochrome P450, family 2, subfamily C, polypeptide 9) (e.g., drug metabolism), gene analysis, common variants (e.g., *2, *3, *5, *6)		Not Covered	Not Covered	Not Covered

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81228	Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number variants (e.g., Bacterial Artificial Chromosome [BAC] or oligo-based comparative genomic hybridization [CGH] microarray analysis)		eC PA	eC PA	Not Covered
81229	Cytogenomic constitutional (genome-wide) microarray analysis; interrogation of genomic regions for copy number and single nucleotide polymorphism (SNP) variants for chromosomal abnormalities		eC PA	eC PA	Not Covered
81230	CYP3A4 (cytochrome P450 family 3 subfamily A member 4) (e.g., drug metabolism), gene analysis, common variant(s) (e.g., *2, *22)		Not Covered	Not Covered	Not Covered
81231	CYP3A5 (cytochrome P450 family 3 subfamily A member 5) (e.g., drug metabolism), gene analysis, common variants (e.g., *2, *3, *4, *5, *6, *7)		Not Covered	Not Covered	Not Covered
81232	DPYD (dihydropyrimidine dehydrogenase) (e.g., 5-fluorouracil/5-FU and capecitabine drug metabolism), gene analysis, common variant(s) (e.g., *2A, *4, *5, *6)		eC PA	eC PA	eC PA
81233	BTK (Bruton's tyrosine kinase) (e.g., chronic lymphocytic leukemia) gene analysis, common variants (e.g., C481S, C481R, C481F)		Review in panels	Review in panels	Review in panels
81234	DMPK (DM1 protein kinase) (e.g., myotonic dystrophy type 1) gene analysis; evaluation to detect abnormal (expanded) alleles		Review in panels	Review in panels	Review in panels
81235	EGFR (epidermal growth factor receptor) (e.g., non-small cell lung cancer) gene analysis, common variants (e.g., exon 19 LREA deletion, L858R, T790M, G719A, G719S, L861Q)		Review in panels	Review in panels	Review in panels
81236	EZH2 (enhancer of zeste 2 polycomb repressive complex 2 subunit) (e.g., myelodysplastic syndrome, myeloproliferative neoplasms) gene analysis, full gene sequence		Review in panels	Review in panels	Review in panels
81237	EZH2 (enhancer of zeste 2 polycomb repressive complex 2 subunit) (e.g., diffuse large B-cell lymphoma) gene analysis, common variant(s) (e.g., codon 646)		Review in panels	Review in panels	Review in panels

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81238	F9 (coagulation factor IX) (e.g., hemophilia B), full gene sequence		eC PA	eC PA	eC PA
81239	DMPK (DM1 protein kinase) (e.g., myotonic dystrophy type 1) gene analysis; characterization of alleles (e.g., expanded size)		Review in panels	Review in panels	Review in panels
81240	F2 (prothrombin, coagulation factor II) (e.g., hereditary hypercoagulability) gene analysis, 20210G>A variant		Review in panels	Review in panels	Not Covered
81241	F5 (coagulation Factor V) (e.g., hereditary hypercoagulability) gene analysis, Leiden variant		Review in panels	Review in panels	Not Covered
81242	FANCC (Fanconi anemia, complementation group C) (e.g., Fanconi anemia, type C) gene analysis, common variant (e.g., IVS4+4A>T)		Review in panels	Review in panels	Not Covered
81243	FMR1 (Fragile X mental retardation 1) (e.g., fragile X mental retardation) gene analysis; evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Not Covered
81244	FMR1 (Fragile X mental retardation 1) (e.g., fragile X mental retardation) gene analysis; characterization of alleles (e.g., expanded size and methylation status)		Review in panels	Review in panels	Not Covered
81245	FLT3 (fms-related tyrosine kinase 3) (e.g., acute myeloid leukemia), gene analysis, internal tandem duplication (ITD) variants (i.e., exons 14, 15)		Review in panels	Review in panels	Review in panels
81246	FLT3 (fms-related tyrosine kinase 3) (e.g., acute myeloid leukemia), gene analysis; tyrosine kinase domain (TKD) variants (e.g., D835, I836)		Review in panels	Not Covered	Review in panels
81247	G6PD (glucose-6-phosphate dehydrogenase) (e.g., hemolytic anemia, jaundice), gene analysis; common variant(s) (e.g., A, A-)		Review in panels	Not Covered	Review in panels
81248	G6PD (glucose-6-phosphate dehydrogenase) (e.g., hemolytic anemia, jaundice), gene analysis; known familial variant(s)		eC PA	Not Covered	eC PA
81249	G6PD (glucose-6-phosphate dehydrogenase) (e.g., hemolytic anemia, jaundice), gene analysis; full gene sequence		eC PA	Not Covered	eC PA

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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)		Review in panels	Review in panels	Not Covered
81251	GBA (glucosidase, beta, acid) (e.g., Gaucher disease) gene analysis, common variants (e.g., N370S, 84GG, L444P, IVS2+1G>A)		Review in panels	Review in panels	Not Covered
81252	GJB2 (gap junction protein, beta 2, 26kDa; connexin 26) (e.g., nonsyndromic hearing loss) gene analysis; full gene sequence		eC PA	Not Covered	Not Covered
81253	GJB2 (gap junction protein, beta 2, 26kDa; connexin 26) (e.g., nonsyndromic hearing loss) gene analysis; known familial variants		eC PA	Not Covered	Not Covered
81254	GJB6 (gap junction protein, beta 6, 30kDa, connexin 30) (e.g., nonsyndromic hearing loss) gene analysis, common variants (e.g., 309kb [del(GJB6-D13S1830)] and 232kb [del(GJB6-D13S1854)])		eC PA	Not Covered	Not Covered
81255	HEXA (hexosaminidase A [alpha polypeptide]) (e.g., Tay-Sachs disease) gene analysis, common variants (e.g., 1278insTATC, 1421+1G>C, G269S)		Review in panels	Review in panels	Not Covered
81256	HFE (hemochromatosis) (e.g., hereditary hemochromatosis) gene analysis, common variants (e.g., C282Y, H63D)		Review in panels	Review in panels	Review in panels
81257	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (e.g., alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis, for common deletions or variant (e.g., Southeast Asian, Thai, Filipino, Mediterranean, alpha3.7, alpha4.2, alpha20.5, and Constant Spring)		eC PA	eC PA	Not Covered
81258	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (e.g., alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; known familial variant		eC PA	eC PA	eC PA
81259	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (e.g., alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; full gene sequence		eC PA	eC PA	eC PA

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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)		Review in panels	Review in Panels	Not Covered
81261	IGH@ (Immunoglobulin heavy chain locus) (e.g., leukemias and lymphomas, B-cell), gene rearrangement analysis to detect abnormal clonal population(s); amplified methodology (e.g., polymerase chain reaction)		Review in panels	Review in panels	Review in panels
81262	IGH@ (Immunoglobulin heavy chain locus) (e.g., leukemias and lymphomas, B-cell), gene rearrangement analysis to detect abnormal clonal population(s); direct probe methodology (e.g., Southern blot)		Review in panels	Review in panels	Review in panels
81263	IGH@ (Immunoglobulin heavy chain locus) (e.g., leukemia and lymphoma, B-cell), variable region somatic mutation analysis		Review in panels	Review in panels	Review in panels
81264	IGK@ (Immunoglobulin kappa light chain locus) (e.g., leukemia and lymphoma, B-cell), gene rearrangement analysis, evaluation to detect abnormal clonal population(s)		Review in panels	Review in panels	Review in panels
81265	Comparative analysis using Short Tandem Repeat (STR) markers; patient and comparative specimen (e.g., pre-transplant recipient and donor germline testing, post-transplant non-hematopoietic recipient germline [e.g., buccal swab or other germline tissue sample] and donor testing, twin zygosity testing, or maternal cell contamination of fetal cells)		Review in panels	Review in panels	Review in panels
81266	Comparative analysis using Short Tandem Repeat (STR) markers; each additional specimen (e.g., additional cord blood donor, additional fetal samples from different cultures, or additional zygosity in multiple birth pregnancies) (List separately in addition to code for primary procedure)		Review in panels	Review in panels	Review in panels
81267	Chimerism (engraftment) analysis, post transplantation specimen (e.g., hematopoietic stem cell), includes comparison to previously performed baseline analyses; without cell selection		Review in panels	Review in panels	Review in panels

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81268	Chimerism (engraftment) analysis, post transplantation specimen (e.g., hematopoietic stem cell), includes comparison to previously performed baseline analyses; with cell selection (e.g., CD3, CD33), each cell type		Review in panels	Review in panels	Review in panels
81269	HBA1/HBA2 (alpha globin 1 and alpha globin 2) (e.g., alpha thalassemia, Hb Bart hydrops fetalis syndrome, HbH disease), gene analysis; duplication/deletion variants		eC PA	eC PA	eC PA
81270	JAK2 (Janus kinase 2) (e.g., myeloproliferative disorder) gene analysis, p.Val617Phe (V617F) variant		Review in panels	Review in panels	Review in panels
81271	HTT (huntingtin) (e.g., Huntington disease) gene analysis; evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81272	KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (e.g., gastrointestinal stromal tumor [GIST], acute myeloid leukemia, melanoma), gene analysis, targeted sequence analysis (e.g., exons 8, 11, 13, 17, 18)		Review in panels	Review in panels	Review in panels
81273	KIT (v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog) (e.g., mastocytosis), gene analysis, D816 variant(s)		Review in panels	Review in panels	Review in panels
81274	HTT (huntingtin) (e.g., Huntington disease) gene analysis; characterization of alleles (e.g., expanded size)		Review in panels	Review in panels	Review in panels
81275	KRAS (Kirsten rat sarcoma viral oncogene) (e.g., carcinoma) gene analysis, variants in codons 12 and 13; variants in exon 2 (e.g... Condons 12 and 13)		Review in panels	Review in panels	Review in panels
81276	KRAS (Kirsten rat sarcoma viral oncogene homolog) (e.g., carcinoma) gene analysis; additional variant(s) (e.g., codon 61, codon 146)		Review in panels	Review in panels	Review in panels
81283	IFNL3 (interferon, lambda 3) (e.g., drug response), gene analysis, rs12979860 variant		Not Covered	Not Covered	Not Covered
81284	FXN (frataxin) (e.g., Friedreich ataxia) gene analysis; evaluation to detect abnormal (expanded) alleles		Review in panels	Review in panels	Review in panels

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81285	FXN (frataxin) (e.g., Friedreich ataxia) gene analysis; characterization of alleles (e.g., expanded size)		Review in panels	Review in panels	Review in panels
81286	FXN (frataxin) (e.g., Friedreich ataxia) gene analysis; full gene sequence		eC PA	eC PA	eC PA
81287	MGMT (O-6-methylguanine-DNA methyltransferase) (e.g., glioblastoma multiforme), methylation analysis		Review in panels	Not Covered	Review in panels
81288	MLH1 (mutL homolog 1, colon cancer, nonpolyposis type 2) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; promoter methylation analysis		Review in panels	Not Covered	Review in panels
81289	FXN (frataxin) (e.g., Friedreich ataxia) gene analysis; known familial variant(s)		eC PA	eC PA	eC PA
81290	MCOLN1 (mucolipin 1) (e.g., Mucolipidosis, type IV) gene analysis, common variants (e.g., IVS3-2A>G, del6.4kb)		Review in panels	Review in panels	Not Covered
81291	MTHFR (5,10-methylenetetrahydrofolate reductase) (e.g., hereditary hypercoagulability) gene analysis, common variants (e.g., 677T, 1298C)		Not Covered	Not Covered	Not Covered
81292	MLH1 (mutL homolog 1, colon cancer, nonpolyposis type 2) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81293	MLH1 (mutL homolog 1, colon cancer, nonpolyposis type 2) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; known familial variants		eC PA	eC PA	eC PA
81294	MLH1 (mutL homolog 1, colon cancer, nonpolyposis type 2) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants		eC PA	eC PA	eC PA
81295	MSH2 (mutS homolog 2, colon cancer, nonpolyposis type 1) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81296	MSH2 (mutS homolog 2, colon cancer, nonpolyposis type 1) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; known familial variants		eC PA	eC PA	eC PA

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81297	MSH2 (mutS homolog 2, colon cancer, nonpolyposis type 1) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants		eC PA	eC PA	eC PA
81298	MSH6 (mutS homolog 6 [E. coli]) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81299	MSH6 (mutS homolog 6 [E. coli]) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; known familial variants		eC PA	eC PA	eC PA
81300	MSH6 (mutS homolog 6 [E. coli]) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants		eC PA	eC PA	eC PA
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		Review in panels	Review in panels	Review in panels
81302	MECP2 (methyl CpG binding protein 2) (e.g., Rett syndrome) gene analysis; full sequence analysis		eC PA	Not Covered	Not Covered
81303	MECP2 (methyl CpG binding protein 2) (e.g., Rett syndrome) gene analysis; known familial variant		eC PA	Not Covered	Not Covered
81304	MECP2 (methyl CpG binding protein 2) (e.g., Rett syndrome) gene analysis; duplication/deletion variants		eC PA	Not Covered	Not Covered
81305	MYD88 (myeloid differentiation primary response 88) (e.g., Waldenstrom's macroglobulinemia, lymphoplasmacytic leukemia) gene analysis, p.Leu265Pro (L265P) variant		Review in panels	Review in panels	Review in panels
81306	NUDT15 (nudix hydrolase 15) (e.g., drug metabolism) gene analysis, common variant(s) (e.g., *2, *3, *4, *5, *6)		eC PA	eC PA	eC PA

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81310	NPM1 (nucleophosmin) (e.g., acute myeloid leukemia) gene analysis, exon 12 variants		Review in panels	Review in panels	Review in panels
81311	NRAS (neuroblastoma RAS viral [v-ras] oncogene homolog) (e.g., colorectal carcinoma), gene analysis, variants in exon 2 (e.g., codons 12 and 13) and exon 3 (e.g., codon 61)		Review in panels	Review in panels	Review in panels
81312	PABPN1 (poly[A] binding protein nuclear 1) (e.g., oculopharyngeal muscular dystrophy) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81313	PCA3/KLK3 (prostate cancer antigen 3 [non-protein coding]/kallikrein-related peptidase 3 [prostate specific antigen]) ratio (e.g., prostate cancer)		eC PA	Not Covered	eC PA
81314	PDGFRA (platelet-derived growth factor receptor, alpha polypeptide) (e.g., gastrointestinal stromal tumor [GIST]), gene analysis, targeted sequence analysis (e.g., exons 12, 18)		Review in panels	Review in panels	Review in panels
81315	PML/RARalpha, (t(15;17)), (promyelocytic leukemia/retinoic acid receptor alpha) (e.g., promyelocytic leukemia) translocation analysis; common breakpoints (e.g., intron 3 and intron 6), qualitative or quantitative		Review in panels	Review in panels	Review in panels
81316	PML/RARalpha, (t(15;17)), (promyelocytic leukemia/retinoic acid receptor alpha) (e.g., promyelocytic leukemia) translocation analysis; single breakpoint (e.g., intron 3, intron 6 or exon 6), qualitative or quantitative		Review in panels	Review in panels	Review in panels
81317	PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81318	PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; known familial variants		eC PA	eC PA	eC PA
81319	PMS2 (postmeiotic segregation increased 2 [S. cerevisiae]) (e.g., hereditary non-polyposis colorectal cancer, Lynch syndrome) gene analysis; duplication/deletion variants		eC PA	eC PA	eC PA

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81320	PLCG2 (phospholipase C gamma 2) (e.g., chronic lymphocytic leukemia) gene analysis, common variants (e.g., R665W, S707F, L845F)		Review in panels	Review in panels	Review in panels
81321	PTEN (phosphatase and tensin homolog) (e.g., Cowden syndrome, PTEN hamartoma tumor syndrome) gene analysis; full sequence analysis		eC PA	eC PA	eC PA
81322	PTEN (phosphatase and tensin homolog) (e.g., Cowden syndrome, PTEN hamartoma tumor syndrome) gene analysis; known familial variant		eC PA	eC PA	eC PA
81323	PTEN (phosphatase and tensin homolog) (e.g., Cowden syndrome, PTEN hamartoma tumor syndrome) gene analysis; duplication/deletion variant		eC PA	eC PA	eC PA
81324	PMP22 (peripheral myelin protein 22) (e.g., Charcot-Marie-Tooth, hereditary neuropathy with liability to pressure palsies) gene analysis; duplication/deletion analysis		Review in panels	Not Covered	Not Covered
81325	PMP22 (peripheral myelin protein 22) (e.g., Charcot-Marie-Tooth, hereditary neuropathy with liability to pressure palsies) gene analysis; full sequence analysis		eC PA	Not Covered	Not Covered
81326	PMP22 (peripheral myelin protein 22) (e.g., Charcot-Marie-Tooth, hereditary neuropathy with liability to pressure palsies) gene analysis; known familial variant		eC PA	Not Covered	Not Covered
81327	SEPT9 (Septin9) (e.g., colorectal cancer) methylation analysis	**ColoVantage®** (Clinical Genomics) **EPI proColon** (Polymedco)	Not Covered	Not Covered	Not Covered
81328	SLCO1B1 (solute carrier organic anion transporter family, member 1B1) (e.g., adverse drug reaction), gene analysis, common variant(s) (e.g., *5)		Not Covered	Not Covered	Not Covered
81329	SMN1 (survival of motor neuron 1, telomeric) (e.g., spinal muscular atrophy) gene analysis; dosage/deletion analysis (e.g., carrier testing), includes SMN2 (survival of motor neuron 2, centromeric) analysis, if performed		Review in panels	Review in panels	Review in panels

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81330	SMPD1(sphingomyelin phosphodiesterase 1, acid lysosomal) (e.g., Niemann-Pick disease, Type A) gene analysis, common variants (e.g., R496L, L302P, fsP330)		Review in panels	Review in panels	Not Covered
81331	SNRPN/UBE3A (small nuclear ribonucleoprotein polypeptide N and ubiquitin protein ligase E3A) (e.g., Prader-Willi syndrome and/or Angelman syndrome), methylation analysis		Review in panels	Review in panels	Not Covered
81332	SERPINA1 (serpin peptidase inhibitor, clade A, alpha-1 antiproteinase, antitrypsin, member 1) (e.g., alpha-1-antitrypsin deficiency), gene analysis, common variants (e.g., *S and *Z)		Review in panels	Review in panels	Review in Panels
81333	TGFBI (transforming growth factor beta-induced) (e.g., corneal dystrophy) gene analysis, common variants (e.g., R124H, R124C, R124L, R555W, R555Q)		Review in panels	Review in panels	Review in panels
81334	RUNX1 (runt related transcription factor 1) (e.g., acute myeloid leukemia, familial platelet disorder with associated myeloid malignancy), gene analysis, targeted sequence analysis (e.g., exons 3-8)		Review in panels	Not Covered	Review in panels
81335	TPMT (thiopurine S-methyltransferase) (e.g., drug metabolism), gene analysis, common variants (e.g., *2, *3)		eC PA	Not Covered	eC PA
81336	SMN1 (survival of motor neuron 1, telomeric) (e.g., spinal muscular atrophy) gene analysis; full gene sequence		eC PA	eC PA	eC PA
81337	SMN1 (survival of motor neuron 1, telomeric) (e.g., spinal muscular atrophy) gene analysis; known familial sequence variant(s)		eC PA	eC PA	eC PA
81340	TRB@ (T cell antigen receptor, beta) (e.g., leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using amplification methodology (e.g., polymerase chain reaction)		Review in panels	Review in panels	Review in panels
81341	TRB@ (T cell antigen receptor, beta) (e.g., leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using direct probe methodology (e.g., Southern blot)		Review in panels	Review in panels	Review in panels

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81342	TRG@ (T cell antigen receptor, gamma) (e.g., leukemia and lymphoma), gene rearrangement analysis, evaluation to detect abnormal clonal population(s)		Review in panels	Review in panels	Review in panels
81343	PPP2R2B (protein phosphatase 2 regulatory subunit Bbeta) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81344	TBP (TATA box binding protein) (e.g., spinocerebellar ataxia) gene analysis, evaluation to detect abnormal (e.g., expanded) alleles		Review in panels	Review in panels	Review in panels
81345	TERT (telomerase reverse transcriptase) (e.g., thyroid carcinoma, glioblastoma multiforme) gene analysis, targeted sequence analysis (e.g., promoter region)		Review in panels	Review in panels	Review in panels
81346	TYMS (thymidylate synthetase) (e.g., 5-fluorouracil/5-FU drug metabolism), gene analysis, common variant(s) (e.g., tandem repeat variant)		Not Covered	Not Covered	Not Covered
81350	UGT1A1 (UDP glucuronosyltransferase 1 family, polypeptide A1) (e.g., irinotecan metabolism), gene analysis, common variants (e.g., *28, *36, *37)		eC PA	Not Covered	Not Covered
81355	VKORC1 (vitamin K epoxide reductase complex, subunit 1) (e.g., warfarin metabolism), gene analysis, common variant(s) (e.g., 1639G>A, c.a73+1000C>T)		Not Covered	Not Covered	Not Covered
81361	HBB (hemoglobin, subunit beta) (e.g., sickle cell anemia, beta thalassemia, hemoglobinopathy); common variant(s) (e.g., HbS, HbC, HbE)		eC PA	eC PA	Not Covered
81362	HBB (hemoglobin, subunit beta) (e.g., sickle cell anemia, beta thalassemia, hemoglobinopathy); known familial variant(s)		eC PA	eC PA	Not Covered
81363	HBB (hemoglobin, subunit beta) (e.g., sickle cell anemia, beta thalassemia, hemoglobinopathy); duplication/deletion variant(s)		eC PA	eC PA	Not Covered
81364	HBB (hemoglobin, subunit beta) (e.g., sickle cell anemia, beta thalassemia, hemoglobinopathy); full gene sequence		eC PA	eC PA	Not Covered

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81370	HLA Class I and II typing, low resolution (e.g., antigen equivalents); HLA-A, -B, -C, -DRB1/3/4/5, and -DQB1		Review in panels	Review in panels	Review in panels
81371	HLA Class I and II typing, low resolution (e.g., antigen equivalents); HLA-A, -B, and -DRB1/3/4/5 (e.g., verification typing)		Review in panels	Review in panels	Review in panels
81372	HLA Class I typing, low resolution (e.g., antigen equivalents); complete (i.e., HLA-A, -B, and -C)		Review in panels	Review in panels	Review in panels
81373	HLA Class I typing, low resolution (e.g., antigen equivalents); 1 locus (e.g., HLA-A, -B, or -C), each		Review in panels	Review in panels	Review in panels
81374	HLA Class I typing, low resolution (e.g., antigen equivalents); 1 antigen equivalent (e.g., B*27), each		Review in panels	Review in panels	Review in panels
81375	HLA Class II typing, low resolution (e.g., antigen equivalents); HLA-DRB1/3/4/5 and -DQB1		Review in panels	Review in panels	Review in panels
81376	HLA Class II typing, low resolution (e.g., antigen equivalents); 1 locus (e.g., HLA-DRB1/3/4/5, -DQB1, -DQA1, -DPB1, or -DPA1), each		Review in panels	Review in panels	Review in panels
81377	HLA Class II typing, low resolution (e.g., antigen equivalents); 1 antigen equivalent, each		Review in panels	Review in panels	Review in panels
81378	HLA Class I and II typing, high resolution (i.e., alleles or allele groups), HLA-A, -B, -C, and -DRB1		Review in panels	Review in panels	Review in panels
81379	HLA Class I typing, high resolution (i.e., alleles or allele groups); complete (i.e., HLA-A, -B, and -C)		Review in panels	Review in panels	Review in panels
81380	HLA Class I typing, high resolution (i.e., alleles or allele groups); 1 locus (e.g., HLA-A, -B, or -C), each		Review in panels	Review in panels	Review in panels
81381	HLA Class I typing, high resolution (i.e., alleles or allele groups); 1 allele or allele group (e.g., B*57:01P), each		Review in panels	Review in panels	Review in panels

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81382	HLA Class II typing, high resolution (i.e., alleles or allele groups); 1 locus (e.g., HLA-DRB1, -DRB3, -DRB4, -DRB5, -DQB1, -DQA1, -DPB1, or -DPA1), each		Review in panels	Review in panels	Review in panels
81383	HLA Class II typing, high resolution (i.e., alleles or allele groups); 1 allele or allele group (e.g., HLA-DQB1*06:02P), each		Review in panels	Review in panels	Review in panels
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)		eC PA	eC PA	eC PA
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)		eC PA	eC PA	eC PA
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), loss of heterozygosity [LOH], uniparenteal sisomy [UPD])		eC PA	eC PA	eC PA
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)		eC PA	eC PA	eC PA
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)		eC PA	eC PA	eC PA
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)		eC PA	eC PA	eC PA

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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)		eC PA	eC PA	eC PA
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 1 platform)		eC PA	eC PA	eC PA
81408	Molecular pathology procedure, Level 9 (e.g., analysis of > 50 exons in a single gene by DNA sequence analysis)		eC PA	eC PA	eC PA
81410	Aortic dysfunction or dilation (e.g., Marfan syndrome, Loeys Dietz syndrome, Ehler Danlos syndrome type IV, arterial tortuosity syndrome); genomic sequence analysis panel, must include sequencing of at least 9 genes, including FBN1, TGFBR1, TGFBR2, COL3A1, MYH11, ACTA2, SLC2A10, SMAD3, and MYLK		eC PA	Not Covered	Not Covered
81411	Aortic dysfunction or dilation (e.g., Marfan syndrome, Loeys Dietz syndrome, Ehler Danlos syndrome type IV, arterial tortuosity syndrome); duplication/deletion analysis panel, must include analyses for TGFBR1, TGFBR2, MYH11, and COL3A1		eC PA	Not Covered	Not Covered
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		eC PA	Not Covered	Not Covered

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81413	Cardiac ion channelopathies (e.g., 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		eC PA	Not Covered	Not Covered
81414	Cardiac ion channelopathies (e.g., 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		eC PA	Not Covered	Not Covered
81415	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis		eC PA	Not Covered	Not Covered
81416 +	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator exome (e.g., parents, siblings) (List separately in addition to code for primary procedure)		eC PA	Not Covered	Not Covered
81417	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained exome sequence (e.g., updated knowledge or unrelated condition/syndrome)		eC PA	Not Covered	Not Covered
81420	Fetal chromosomal aneuploidy (e.g., trisomy 21, monosomy X) genomic sequence analysis panel, circulating cell-free fetal DNA in maternal blood, must include analysis of chromosomes 13, 18, and 21		eC PA	eC PA	Not Covered
81422	Fetal chromosomal microdeletion(s) genomic sequence analysis (e.g., DiGeorge syndrome, Cri-du-chat syndrome), circulating cell-free fetal DNA in maternal blood		Not Covered	Not Covered	Not Covered
81425	Genome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis	*see also 81415*	Not Covered	Not Covered	Not Covered

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81426 +	Genome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator genome (e.g., parents, siblings) (List separately in addition to code for primary procedure)		Not Covered	Not Covered	Not Covered
81427	Genome (e.g., unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained genome sequence (e.g., updated knowledge or unrelated condition/syndrome)		Not Covered	Not Covered	Not Covered
81430	Hearing loss (e.g., nonsyndromic hearing loss, Usher syndrome, Pendred syndrome); genomic sequence analysis panel, must include sequencing of at least 60 genes, including CDH23, CLRN1, GJB2, GPR98, MTRNR1, MYO7A, MYO15A, PCDH15, OTOF, SLC26A4, TMC1, TMPRSS3, USH1C, USH1G, USH2A, and WFS1	**OtoGenome™** (Partner's Personalized Medicine)	eC PA	Not Covered	Not Covered
81431	Hearing loss (e.g., nonsyndromic hearing loss, Usher syndrome, Pendred syndrome); duplication/deletion analysis panel, must include copy number analyses for STRC and DFNB1 deletions in GJB2 and GJB6 genes	**OtoGenome™** (Partner's Personalized Medicine)	eC PA	Not Covered	Not Covered
81432	Hereditary breast cancer-related disorders (e.g., hereditary breast cancer, hereditary ovarian cancer, hereditary endometrial cancer); genomic sequence analysis panel, must include sequencing of at least 14 genes, including ATM, BRCA1, BRCA2, BRIP1, CDH1, MLH1, MSH2, MSH6, NBN, PALB2, PTEN, RAD51C, STK11, and TP53		eC PA	Not Covered	eC PA
81433	Hereditary breast cancer-related disorders (e.g., hereditary breast cancer, hereditary ovarian cancer, hereditary endometrial cancer); duplication/deletion analysis panel, must include analyses for BRCA1, BRCA2, MLH1, MSH2, and STK11		eC PA	Not Covered	Not Covered
81434	Hereditary retinal disorders (e.g., 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		eC PA	Not Covered	Not Covered

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81435	Hereditary colon cancer disorders (e.g., Lynch syndrome, PTEN hamartoma syndrome, Cowden syndrome, familial adenomatosis polyposis); genomic sequence analysis panel, must include sequencing of at least 10 genes, including APC, BNPR1A, CDH1, MLH1, MSH2, MSH6, MUTYH, PTEN, SMAD4, and STK11		eC PA	Not Covered	eC PA
81436	Hereditary colon cancer syndromes (e.g., Lynch syndrome, familial adenomatosis polyposis); duplication/deletion gene analysis panel, must include analysis of at least 8 genes, including APC, MLH1, MSH2, MSH6, PMS2, EPCAM, CHEK2, and MUTYH		eC PA	Not Covered	eC PA
81437	Hereditary neuroendocrine tumor disorders (e.g., 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		eC PA	Not Covered	eC PA
81438	Hereditary neuroendocrine tumor disorders (e.g., medullary thyroid carcinoma, parathyroid carcinoma, malignant pheochromocytoma or paraganglioma); duplication/deletion analysis panel, must include analyses for SDHB, SDHC, SDHD, and VHL		eC PA	Not Covered	Not Covered
81439	Inherited cardiomyopathy (e.g., hypertrophic cardiomyopathy, dilated cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy) genomic sequence analysis panel, must include sequencing of at least 5 genes, including DSG2, MYBPC3, MYH7, PKP2, and TTN		eC PA	Not Covered	Not Covered
81440	Nuclear encoded mitochondrial genes (e.g., neurologic or myopathic phenotypes), genomic sequence panel, must include analysis of at least 100 genes, including BCS1L, C10orf2, COQ2, COX10, DGUOK, MPV17, OPA1, PDSS2, POLG, POLG2, RRM2B, SCO1, SCO2, SLC25A4, SUCLA2, SUCLG1, TAZ, TK2, and TYMP		eC PA	Not Covered	Not Covered

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81442	Noonan spectrum disorders (e.g., 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		eC PA	Not Covered	Not Covered
81443	Genetic testing for severe inherited conditions (e.g., cystic fibrosis, Ashkenazi Jewish-associated disorders [e.g., Bloom syndrome, Canavan disease, Fanconi anemia type C, mucolipidosis type VI, Gaucher disease, Tay-Sachs disease], beta hemoglobinopathies, phenylketonuria, galactosemia), genomic sequence analysis panel, must include sequencing of at least 15 genes (e.g., ACADM, ARSA, ASPA, ATP7B, BCKDHA, BCKDHB, BLM, CFTR, DHCR7, FANCC, G6PC, GAA, GALT, GBA, GBE1, HBB, HEXA, IKBKAP, MCOLN1, PAH)		eC PA	Not Covered	Not Covered
81445	Targeted genomic sequence analysis panel, solid organ neoplasm, DNA analysis and RNA analysis when performed, 5-50 genes (e.g., ALK, BRAF, CDKN2A, EGFR, ERBB2, KIT, KRAS, NRAS, MET, PDGFRA, PDGFRB, PGR, PIK3CA, PTEN, RET), interrogation for sequence variants and copy number variants or rearrangements, if performed		eC PA	Not Covered	eC PA
81448	Hereditary peripheral neuropathies (e.g., Charcot-Marie-Tooth, spastic paraplegia), genomic sequence analysis panel, must include sequencing of at least 5 peripheral neuropathy-related genes (e.g., BSCL2, GJB1, MFN2, MPZ, REEP1, SPAST, SPG11, SPTLC1)	e.g. **CMT Advanced Evaluation** (Athena Diagnostics)	eC PA	Not Covered	eC PA
81450	Targeted genomic sequence analysis panel, hematolymphoid neoplasm or disorder, DNA analysis and RNA analysis when performed, 5-50 genes (e.g., BRAF, CEBPA, DNMT3A, EZH2, FLT3, IDH1, IDH2, JAK2, KRAS, KIT, MLL, NRAS, NPM1, NOTCH1), interrogation for sequence variants, and copy number variants or rearrangements, or isoform expression or mRNA expression levels, if performed	e.g. **FoundationOne HEME** (Foundation Medicine)	eC PA	Not Covered	eC PA

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81455	Targeted genomic sequence analysis panel, solid organ or hematolymphoid neoplasm, DNA and RNA analysis when performed, 51 or greater genes (e.g., ALK, BRAF, CDKN2A, CEBPA, DNMT3A, EGFR, ERBB2, EZH2, FLT3, IDH1, IDH2, JAK2, KIT, KRAS, MLL, NPM1, NRAS, MET, NOTCH1, PDGFRA, PDGFRB, PGR, PIK3CA, PTEN, RET), interrogation for sequence variants and copy number variants or rearrangements, if performed	**Foundation One® FoundationACT** (Foundation Medicine)	eC PA	Not Covered	eC PA
81460	Whole mitochondrial genome (e.g., Leigh syndrome, mitochondrial encephalomyopathy, lactic acidosis, and stroke-like episodes [MELAS], myoclonic epilepsy with ragged-red fibers [MERFF], neuropathy, ataxia, and retinitis pigmentosa [NARP], Leber hereditary optic neuropathy [LHON]), genomic sequence, must include sequence analysis of entire mitochondrial genome with heteroplasmy detection		eC PA	Not Covered	Not Covered
81465	Whole mitochondrial genome large deletion analysis panel (e.g., Kearns-Sayre syndrome, chronic progressive external ophthalmoplegia), including heteroplasmy detection, if performed		eC PA	Not Covered	Not Covered
81470	X-linked intellectual disability (XLID) (e.g., syndromic and non-syndromic XLID); genomic sequence analysis panel, must include sequencing of at least 60 genes, including ARX, ATRX, CDKL5, FGD1, FMR1, HUWE1, IL1RAPL, KDM5C, L1CAM, MECP2, MED12, MID1, OCRL, RPS6KA3, and SLC16A2		eC PA	Not Covered	Not Covered
81471	X-linked intellectual disability (XLID) (e.g., syndromic and non-syndromic XLID); duplication/deletion gene analysis, must include analysis of at least 60 genes, including ARX, ATRX, CDKL5, FGD1, FMR1, HUWE1, IL1RAPL, KDM5C, L1CAM, MECP2, MED12, MID1, OCRL, RPS6KA3, and SLC16A2		eC PA	Not Covered	Not Covered
81479	Unlisted molecular pathology procedure	*Explanatory notes identifying specific test must accompany claim*	eC PA	eC PA	eC PA

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81490	Autoimmune (rheumatoid arthritis), analysis of 12 biomarkers using immunoassays, utilizing serum, prognostic algorithm reported as a disease activity score	**Vectra®DA** (Vectrada)	Not Covered	Not Covered	eC PA
81493	Coronary artery disease, mRNA, gene expression profiling by real-time RT-PCR of 23 genes, utilizing whole peripheral blood, algorithm reported as a risk score	**Corus® CAD, (CardioDx) * for Medicare only.**	Not Covered	Not Covered	Not Covered
81500	Oncology (ovarian), biochemical assays of two proteins (CA-125 and HE4), utilizing serum, with menopausal status, algorithm reported as a risk score	**ROMA** (Fujirebio)	Not Covered	Not Covered	Not Covered
81503	Oncology (ovarian), biochemical assays of five proteins (CA-125, apolipoprotein A1, beta-2 microglobulin, transferrin, and pre-albumin), utilizing serum, algorithm reported as a risk score	**OVA1 (**ASPiRA - a Vermillion Co.)	eC PA	Not Covered	Not Covered
81504	Oncology (tissue of origin), microarray gene expression profiling of > 2000 genes, utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as tissue similarity score	**Pathwork Tissue of Origin** (ResponseDx) *pka* Tissue of Origin	Not Covered	Not Covered	eC PA
81506	Endocrinology (type 2 diabetes), biochemical assays of seven analytes (glucose, HbA1c, insulin, hs-CRP, adiponectin, ferritin, interleukin 2-receptor alpha), utilizing serum or plasma, algorithm reporting a risk score	**PreDx™ Diabetes Risk Score** (Tethys Bioscience)	Not Covered	Not Covered	Not Covered
81507	Fetal aneuploidy (trisomy 21, 18, and 13) DNA sequence analysis of selected regions using maternal plasma, algorithm reported as a risk score for each trisomy	**Harmony™ Prenatal test** (Ariosa Diagnostics) **MaterniT21™ PLUS** (Sequenom)	eC PA	eC PA	Not Covered
81508	Fetal congenital abnormalities, biochemical assays of two proteins (PAPP-A, hCG [any form]), utilizing maternal serum, algorithm reported as a risk score		Review in panels	Review in panels	Not Covered
81509	Fetal congenital abnormalities, biochemical assays of three proteins (PAPP-A, hCG [any form], DIA), utilizing maternal serum, algorithm reported as a risk score		Review in panels	Review in panels	Not Covered
81510	Fetal congenital abnormalities, biochemical assays of three analytes (AFP, uE3, hCG [any form]), utilizing maternal serum, algorithm reported as a risk score		Review in panels	Review in panels	Not Covered

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81511	Fetal congenital abnormalities, biochemical assays of four analytes (AFP, uE3, hCG [any form], DIA) utilizing maternal serum, algorithm reported as a risk score (may include additional results from previous biochemical testing)		Review in panels	Review in panels	Not Covered
81512	Fetal congenital abnormalities, biochemical assays of five analytes (AFP, uE3, total hCG, hyperglycosylated hCG, DIA) utilizing maternal serum, algorithm reported as a risk score		Review in panels	Review in panels	Not Covered
81518	Oncology (breast), mRNA, gene expression profiling by real-time RT-PCR of 11 genes (7 content and 4 housekeeping), utilizing formalin-fixed paraffin-embedded tissue, algorithms reported as percentage risk for metastatic recurrence and likelihood of benefit from extended endocrine therapy	**Breast Cancer Index** (bioTheranostics)	Not Covered	Not Covered	eC PA
81519	Oncology (breast), mRNA, gene expression profiling by real-time RT-PCR of 21 genes, utilizing formalin-fixed paraffin embedded tissue, algorithm reported as recurrence score	**OncotypeDx® Breast Cancer Assay (**Genomic Health)	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
81520	Oncology (breast), mRNA gene expression profiling by hybrid capture of 58 genes (50 content and 8 housekeeping), utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a recurrence risk score	**Prosigna Breast Cancer Assay** (NanoString Technologies, Inc.)	eC PA	eC PA	eC PA
81521	Oncology (breast), mRNA, microarray gene expression profiling of 70 content genes and 465 housekeeping genes, utilizing fresh frozen or formalin-fixed paraffin-embedded tissue, algorithm reported as index related to risk of distant metastasis	**MammaPrint® Cancer Assay** (Agendia);	eC PA	eC PA	eC PA
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	**OncotypeDx® Colon Cancer Assay** (Genomic Health)	eC PA	Not Covered	eC PA
81528	Oncology (colorectal) screening, quantitative real-time target and signal amplification of 10 DNA markers (KRAS mutations, promoter methylation of NDRG4 and BMP3) and fecal hemoglobin, utilizing stool, algorithm reported as a positive or negative result	**Cologuard™** Exact Science	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

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81535	Oncology (gynecologic), live tumor cell culture and chemotherapeutic response by DAPI stain and morphology, predictive algorithm reported as a drug response score; first single drug or drug combination	**ChemoFX®** (Helomics)	Not Covered	Not Covered	Not Covered
81536	Oncology (gynecologic), live tumor cell culture and chemotherapeutic response by DAPI stain and morphology, predictive algorithm reported as a drug response score; each additional single drug or drug combination (List separately in addition to code for primary procedure)		Not Covered	Not Covered	Not Covered
81538	Oncology (lung), mass spectrometric 8-protein signature, including amyloid A, utilizing serum, prognostic and predictive algorithm reported as good versus poor overall survival	**VeriStrat** (Biodesix)	eC PA	Not Covered	Not Covered
81539	Oncology (high-grade prostate cancer), biochemical assay of four proteins (Total PSA, Free PSA, Intact PSA, and human kallikrein-2 [hK2]), utilizing plasma or serum, prognostic algorithm reported as a probability score	**4Kscore test** (OPKO marketed by BioReference Lab)	Not Covered	Not Covered	Not Covered
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	**CancerTYPE ID** aka **CTID** (BioTheranostics)	Not Covered	Not Covered	eC PA
81541	Oncology (prostate), mRNA gene expression profiling by real-time RT-PCR of 46 genes (31 content and 15 housekeeping), utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a disease-specific mortality risk score	**Prolaris®** (Myriad Genetic Laboratories, Inc);	Not Covered	Not Covered	eC PA
81545	Oncology (thyroid), gene expression analysis of 142 genes, utilizing fine needle aspirate, algorithm reported as a categorical result (e.g., benign or suspicious)	**Afirma® Thyroid FNA Analysis** (Veracyte)	OOS for eC- No PA required	Not Covered	OOS for eC- No PA required
81551	Oncology (prostate), promoter methylation profiling by real-time PCR of 3 genes (GSTP1, APC, RASSF1), utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a likelihood of prostate cancer detection on repeat biopsy	**ConfirmMDx® for Prostate Cancer** (MDxHealth, Inc);	eC PA	Not Covered	eC PA

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81595	Cardiology (heart transplant), mRNA, gene expression profiling by real-time quantitative PCR of 20 genes (11 content and 9 housekeeping), utilizing subfraction of peripheral blood, algorithm reported as a rejection risk score	**AlloMap®** (CareDx)	eC PA	Not Covered	eC PA
81596	Infectious disease, chronic hepatitis C virus (HCV) infection, six biochemical assays (ALT, A2-macroglobulin, apolipoprotein A-1, total bilirubin, GGT, and haptoglobin) utilizing serum, prognostic algorithm reported as scores for fibrosis and necroinflammatory activity in liver	**Fibrotest/Fibrosure** (Lab Corp, Quest)	Not Covered	Not Covered	Not Covered
81599	Unlisted multianalyte assay with algorithmic analysis	*Explanatory notes identifying specific test must accompany claim*	eC PA	eC PA	eC PA
0002M	Liver disease, ten biochemical assays (ALT, A2-macroglobulin, apolipoprotein A-1, total bilirubin, GGT, haptoglobin, AST, glucose, total cholesterol and triglycerides) utilizing serum, prognostic algorithm reported as quantitative scores for fibrosis, steatosis and alcoholic steatohepatitis (ASH)	**ASH FibroSURE™** (LabCorp)	Not Covered	Not Covered	Not Covered
0003M	Liver disease, ten biochemical assays (ALT, A2-macroglobulin, apolipoprotein A-1, total bilirubin, GGT, haptoglobin, AST, glucose, total cholesterol and triglycerides) utilizing serum, prognostic algorithm reported as quantitative scores for fibrosis, steatosis and nonalcoholic steatohepatitis (NASH)	**NASH FibroSURE™** (LabCorp, Quest)	Not Covered	Not Covered	Not Covered
0004M	Scoliosis, DNA analysis of 53 single nucleotide polymorphisms (SNPs), using saliva, prognostic algorithm reported as a risk score	**ScoliScore™** (Transgenomic)	Not Covered	Not Covered	Not Covered
0006M	Oncology (hepatic), mRNA expression levels of 161 genes, utilizing fresh hepatocellular carcinoma tumor tissue, with alpha-fetoprotein level, algorithm reported as a risk classifier	**HeproDX™**, GoPath Laboratories, LLC (*removed from market*)	Not Covered	Not Covered	Not Covered
0007M	Oncology (gastrointestinal neuroendocrine tumors), real-time PCR expression analysis of 51 genes, utilizing whole peripheral blood, algorithm reported as a nomogram of tumor disease index	**NETest** (Wren Laboratories)	Not Covered	Not Covered	Not Covered

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0009M	Fetal aneuploidy (trisomy 21, and 18) DNA sequence analysis of selected regions using maternal plasma, algorithm reported as a risk score for each trisomy	**VisibiliT test** (Sequenom Center for Molecular Medicine, LLC)	eC PA	Not Covered	Not Covered
0011M	Oncology, prostate cancer, mRNA expression assay of 12 genes (10 content and 2 housekeeping), RT-PCR test utilizing blood plasma and/or urine, algorithms to predict high-grade prostate cancer risk	**NeoLAB Prostate Liquid Biopsy,** (NeoGenomics Laboratories)	Not Covered	Not Covered	Not Covered
0012M	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 urothelial carcinoma	**CxBladder Detect, (**Pacific Edge Diagnostics USA, Ltd.)	Not Covered	Not Covered	Not Covered
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	**CxBladder Monitor**, (Pacific Edge Diagnostics USA, Ltd.)	Not Covered	Not Covered	Not Covered
0001U	Red blood cell antigen typing, DNA, human erythrocyte antigen gene analysis of 35 antigens from 11 blood groups, utilizing whole blood, common RBC alleles reported	**PreciseType™ HEATest** (Immucor, Inc.)	eC PA	Not Covered	eC PA
0003U	Oncology (ovarian) biochemical assays of five proteins (apolipoprotein A-1, CA 125 II, follicle stimulating hormone, human epididymis protein 4, transferrin), utilizing serum, algorithm reported as a likelihood score	**Overa** - OVA1 Next Generation, (Aspira Labs, Inc., Vermillion, Inc.)	OOS for eC- No PA required	Not Covered	OOS for eC- No PA required
0005U	Oncology (prostate) gene expression profile by real-time RT-PCR of 3 genes (ERG, PCA3, and SPDEF), urine, algorithm reported as risk score	**ExosomeDx® Prostate (IntelliScore),** Exosome Diagnostics, Inc.	Not Covered	Not Covered	Not Covered

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0008U	Helicobacter pylori detection and antibiotic resistance, DNA, 16S and 23S rRNA, gyrA, pbp1, rdxA and rpoB, next generation sequencing, formalin-fixed paraffin embedded or fresh tissue, predictive, reported as positive or negative for resistance to clarithromycin, fluoroquinolones, metronidazole, amoxicillin, tetracycline and rifabutin	**AmHPR Helicobacter pylori Antibiotic Resistance Next Generation Sequencing Panel (**American Molecular Laboratories, Inc.)	Not Covered	Not Covered	Not Covered
0009U	Oncology (breast cancer), ERBB2 (HER2) copy number by FISH, tumor cells from formalin fixed paraffin embedded tissue isolated using image-based dielectrophoresis (DEP) sorting, reported as ERBB2 gene amplified or non-amplified	**DEPArray™ HER2** (PacificDx)	Not Covered	Not Covered	Not Covered
0010U	Infectious disease (bacterial), strain typing by whole genome sequencing, phylogenetic-based report of strain relatedness, per submitted isolate	**Bacterial Typing by Whole Genome Sequencing (**Mayo Clinic)	Not Covered	Not Covered	Not Covered
0012U	Germline disorders, gene rearrangement detection by whole genome next-generation sequencing, DNA, whole blood, report of specific gene rearrangement(s)	**MatePair Targeted Rearrangements, Congenital** (Mayo Clinic)	eC PA	Not Covered	Not Covered
0013U	Oncology (solid organ neoplasia), gene rearrangement detection by whole genome next-generation sequencing, DNA, fresh or frozen tissue or cells, report of specific gene rearrangement(s)	**MatePair Targeted Rearrangements, Oncology** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0014U	Hematology (hematolymphoid neoplasia), gene rearrangement detection by whole genome next-generation sequencing, DNA, whole blood or bone marrow, report of specific gene rearrangement(s)	**MatePair Targeted Rearrangements, Hematologic** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0016U	Oncology (hematolymphoid neoplasia), RNA, BCR/ABL1 major and minor breakpoint fusion transcripts, quantitative PCR amplification, blood or bone marrow, report of fusion not detected or detected with quantitation	**BCR-ABL1 major and minor breakpoint fusion transcripts,** (University of Iowa, Department of Pathology) (Asuragen)	OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
0017U	Oncology (hematolymphoid neoplasia), JAK2 mutation, DNA, PCR amplification of exons 12-14 and sequence analysis, blood or bone marrow, report of JAK2 mutation not detected or detected	**JAK2 Mutation** University of Iowa, Department of Pathology)	OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
0018U	Oncology (thyroid), microRNA profiling by RT-PCR of 10 microRNA sequences, utilizing fine needle aspirate, algorithm reported as a positive or negative result for moderate to high risk of malignancy	**ThyraMIR** (Interpace Diagnostics).	Not Covered	Not Covered	Not Covered
0019U	Oncology, RNA, gene expression by whole transcriptome sequencing, formalin-fixed paraffin embedded tissue or fresh frozen tissue, predictive algorithm reported as potential targets for therapeutic agents	**OncoTarget/OncoTreat** (Columbia University Department of Pathology and Cell Biology, Darwin Health)	Not Covered	Not Covered	Not Covered
0022U	Targeted genomic sequence analysis panel, non-small cell lung neoplasia, DNA and RNA analysis, 23 genes, interrogation for sequence variants and rearrangements, reported as presence/absence of variants and associated therapy(ies) to consider	**Oncomine™ Dx Target Test** (Thermo Fisher Scientific) - Also offered by QUEST Diagnostics	Not Covered	Not Covered	eC PA
0023U	U Oncology (acute myelogenous leukemia), DNA, genotyping of internal tandem duplication, p.D835, p.I836, using mononuclear cells, reported as detection or nondetection of FLT3 mutation and indication for or against the use of midostaurin	**LeukoStrat® CDx FLT3 Mutation Assay** (LabPMM LLC, an Invivoscribe Technologies, Inc. company)	OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
0026U	Oncology (thyroid), DNA and mRNA of 112 genes, next-generation sequencing, fine needle aspirate of thyroid nodule, algorithmic analysis reported as a categorical result ("Positive, high probability of malignancy" or "Negative, low probability of malignancy")	**Thyroseq Genomic Classifier** (CBLPath, Inc. University of Pittsburgh Medical Center)	Not Covered	Not Covered	Not Covered
0027U	JAK2 (Janus kinase 2) (e.g., myeloproliferative disorder) gene analysis, targeted sequence analysis exons 12-15	**JAK2 Exons 12 to 15 Sequencing** (Mayo Clinic)	OOS for eC- No PA required	OOS for eC - Not Covered	OOS for eC- No PA required

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
0029U	Drug metabolism (adverse drug reactions and drug response), targeted sequence analysis (i.e., CYP1A2, CYP2C19, CYP2C9, CYP2D6, CYP3A4, CYP3A5, CYP4F2, SLCO1B1, VKORC1 and rs12777823)	**Focused Pharmacogenomics Panel** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0030U	Drug metabolism (warfarin drug response), targeted sequence analysis (i.e., CYP2C9, CYP4F2, VKORC1, rs12777823)	**Warfarin Response Genotype** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0031U	CYP1A2 (cytochrome P450 family 1, subfamily A, member 2)(e.g., drug metabolism) gene analysis, common variants (i.e., *1F, *1K, *6, *7)	**Cytochrome P450 1A2 Genotype** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0032U	COMT (catechol-O-methyltransferase)(drug metabolism) gene analysis, c.472G>A (rs4680) variant	**Catechol-O-Methyltransferase (COMT) Genotype** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0033U	HTR2A (5-hydroxytryptamine receptor 2A), HTR2C (5-hydroxytryptamine receptor 2C) (e.g., citalopram metabolism) gene analysis, common variants (i.e., HTR2A rs7997012 [c.614-2211T>C], HTR2C rs3813929 [c.-759C>T] and rs1414334 [c.551-3008C>G])	**Serotonin Receptor Genotype (HTR2A and HTR2C)** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0034U	TPMT (thiopurine S-methyltransferase), NUDT15 (nudix hydroxylase 15)(e.g., thiopurine metabolism), gene analysis, common variants (i.e., TPMT *2, *3A, *3B, *3C, *4, *5, *6, *8, *12; NUDT15 *3, *4, *5)	**Thiopurine Methyltransferase (TPMT) and Nudix Hydrolase (NUDT15) Genotyping** (Mayo Clinic)	Not Covered	Not Covered	Not Covered
0036U	Exome (i.e., somatic mutations), paired formalin-fixed paraffin-embedded tumor tissue and normal specimen, sequence analyses	**EXaCT-1 Whole Exome Testing** (Lab of OncologyMolecular Detection, Weill Cornell Medicine Clinical Genomics Laboratory)	Not Covered	Not Covered	Not Covered
0037U	Targeted genomic sequence analysis, solid organ neoplasm, DNA analysis of 324 genes, interrogation for sequence variants, gene copy number amplifications, gene rearrangements, microsatellite instability and tumor mutational burden	**FoundationOne CDx™ (F1CDx)** (Foundation Medicine, Inc.)	eC PA	Not Covered	eC PA

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
0040U	BCR/ABL1 (t(9;22)) (e.g., chronic myelogenous leukemia) translocation analysis, major breakpoint, quantitative	**MRDx BCR-ABL Test** (MolecularMD)	Not Covered	Not Covered	Not Covered
0045U	Oncology (breast ductal carcinoma in situ), 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 recurrence score	**The Oncotype DX® Breast DCIS Score™ Test** (Genomic Health, Inc.)	eC PA	Not Covered	eC PA
0046U	FLT3 (fms-related tyrosine kinase 3) (e.g., acute myeloid leukemia) internal tandem duplication (ITD) variants, quantitative	**FLT3 ITD MRD** (NGS LabPMM LLC, Invivoscribe Technologies, Inc. Company)	Not Covered	Not Covered	Not Covered
0047U	Oncology (prostate), mRNA, gene expression profiling by real-time RT-PCR of 17 genes (12 content and 5 housekeeping), utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a risk score	**Oncotype DX Genomic Prostate Score** (Genomic Health, Inc.)	eC PA	Not Covered	eC PA
0048U	Oncology (solid organ neoplasia), DNA, targeted sequencing of protein-coding exons of 468 cancer-associated genes, including interrogation for somatic mutations and microsatellite instability, matched with normal specimens, utilizing formalin-fixed paraffin-embedded tumor tissue, report of clinically significant mutation(s)	**MSK-IMPACT** (Integrated Mutation Profiling of Actionable Cancer Targets) (Memorial Sloan Kettering Cancer Center)	Not Covered	Not Covered	Not Covered
0049U	NPM1 (nucleophosmin) (e.g., acute myeloid leukemia) gene analysis, quantitative	**NPM1 MRD** (NGS LabPMM LLC, an Invivoscribe Technologies, Inc. Company)	Not Covered	Not Covered	Not Covered
0050U	Targeted genomic sequence analysis panel, acute myelogenous leukemia, DNA analysis, 194 genes, interrogation for sequence variants, copy number variants or rearrangements	**MyAML NGS Panel** (LabPMM LLC, an Invivoscribe Technologies, Inc. Company)	Not Covered	Not Covered	Not Covered
0053U	Oncology (prostate cancer), FISH analysis of 4 genes (ASAP1, HDAC9, CHD1 and PTEN), needle biopsy specimen, algorithm reported as probability of higher tumor grade	**Prostate Cancer Risk Panel** (Mayo Clinic Lab developed)	Not Covered	Not Covered	Not Covered

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
0055U	Cardiology (heart transplant), cell-free DNA, PCR assay of 96 DNA target sequences (94 single nucleotide polymorphism targets and two control targets), plasma	**myTAIHEART** (TAI Diagnostics, Inc.)	Not Covered	Not Covered	Not Covered
0056U	Hematology (acute myelogenous leukemia), DNA, whole genome next-generation sequencing to detect gene rearrangement(s), blood or bone marrow, report of specific gene rearrangement(s)	**MatePair Acute Myeloid Leukemia Panel** (Mayo Clinic Lab developed)	Not Covered	Not Covered	Not Covered
0057U	Oncology (solid organ neoplasia), mRNA, gene expression profiling by massively parallel sequencing for analysis of 51 genes, utilizing formalin-fixed paraffinembedded tissue, algorithm reported as a normalized percentile rank	**RNA-Sequencing by NGS** (OmniSeq, Inc.Life Technologies Corp)	Not Covered	Not Covered	Not Covered
0060U	Twin zygosity, genomic targeted sequence analysis of chromosome 2, using circulating cell-free fetal DNA in maternal blood	**Twins Zygosity PLA** (Natera, Inc.)	Not Covered	Not Covered	Not Covered
0067U	Oncology (breast), immunohistochemistry, protein expression profiling of 4 biomarkers (matrix metalloproteinase-1 [MMP-1], carcinoembryonic antigen-related cell adhesion molecule 6 [CEACAM6], hyaluronoglucosaminidase [HYAL1], highly expressed in cancer protein [HEC1]), formalin-fixed paraffin-embedded precancerous breast tissue, algorithm reported as carcinoma risk score	**BBDRisk Dx** (Silbiotech, Inc.)	Not Covered	Not Covered	Not Covered
0069U	Oncology (colorectal), microRNA, RT-PCR expression profiling of miR-31-3p, formalin fixed paraffin-embedded tissue, algorithm reported as an expression score	**miR-31now** (GoPath Laboratories)	Not Covered	Not Covered	Not Covered
0070U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, common and select rare variants (i.e., *2, *3, *4, *4N, *5, *6, *7, *8, *9, *10, *11, *12, *13, *14A, *14B, *15, *17, *29, *35, *36, *41, *57, *61, *63, *68, *83, *xN)	**CYPD6 Common Variants and Copy Number** (Mayo clinic, Laboratory Developed Test)	eC PA	Not Covered	eC PA

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0071U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, full gene sequence (List separately in addition to code for primary procedure) (Use 0071U in conjunction with 0070U)	**CYP2D6 Full Gene Sequencing** (Mayo clinic, Laboratory Developed Test)	eC PA	Not Covered	eC PA
0072U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, targeted sequence analysis (i.e., CYP2D6-2D7 hybrid gene) (List separately in addition to code for primary procedure) (Use 0072U in conjunction with 0070U)	**CYP2D6-2D7 Hybrid Gene Targeted Sequence Analysis** (Mayo Clinic, Laboratory Developed Test)	eC PA	Not Covered	eC PA
0073U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, targeted sequence analysis (i.e., CYP2D7-2D6 hybrid gene) (List separately in addition to code for primary procedure) (Use 0073U in conjunction with 0070U)	**CYP2D7-2D6 Hybrid Gene Targeted Sequence Analysis** (Mayo Clinic, Laboratory Developed Test)	eC PA	Not Covered	eC PA
0074U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, targeted sequence analysis (i.e., non-duplicated gene when duplication/multiplication is trans) (List separately in addition to code for primary procedure) (Use 0074U in conjunction with 0070U)	**CYP2D6 transduplication/multiplication non-duplicated gene targeted sequence analysis** (Mayo clinic, Laboratory Developed	eC PA	Not Covered	eC PA
0075U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, targeted sequence analysis (i.e., 5' gene duplication/multiplication) (List separately in addition to code for primary procedure) (Use 0075U in conjunction with 0070U)	**CYP2D6 5' gene duplication/multiplication targeted sequence analysis** (Mayo clinic, Laboratory Developed Test)	eC PA	Not Covered	eC PA

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0076U	CYP2D6 (cytochrome P450, family 2, subfamily D, polypeptide 6) (e.g., drug metabolism) gene analysis, targeted sequence analysis (i.e., 3' gene duplication/multiplication) (List separately in addition to code for primary procedure) (Use 0076U in conjunction with 0070U)	**CYP2D6 3' gene duplication/multiplication targeted sequence analysis** (Mayo Clinic, Laboratory Developed Test)	eC PA	Not Covered	eC PA
0078U	Pain management (opioid-use disorder) genotyping panel, 16 common variants (i.e., ABCB1, COMT, DAT1, DBH, DOR, DRD1, DRD2, DRD4, GABA, GAL, HTR2A, HTTLPR, MTHFR, MUOR, OPRK1, OPRM1), buccal swab or other germline tissue sample, algorithm reported as positive or negative risk of opioid-use disorder	**INFINITI Neural Response Panel (**PersonalizeDx Labs, AutoGenomics Inc.)	Not Covered	Not Covered	Not Covered
0081U	Oncology (uveal melanoma), mRNA, gene expression profiling by real-time RT-PCR of 15 genes (12 content and 3 housekeeping genes), utilizing fine needle aspirate or formalin-fixed paraffin-embedded tissue, algorithm reported as risk of metastasis	**DecisionDx®-UM,** (Castle Biosciences, Inc.)	eC PA	Not Covered	eC PA
Other Related Tests					
82172	Apolipoprotein, each		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
83006	Growth stimulation expressed gene 2 (ST2, Interleukin 1 receptor like-1)		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
83950	Oncoprotein; HER-2/neu		OOS for eC - No PA required	OOS for eC - No PA required	OOS for eC - No PA required
83951	Oncoprotein; des-gamma-carboxy-prothrombin (DCP)		OOS for eC -	OOS for eC - Not Covered	OOS for eC - Not Covered

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			Not Covered		
83993	Calprotectin, fecal		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
84233	Receptor assay; estrogen		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
84234	Receptor assay; progesterone		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
86152	Cell enumeration using immunologic selection and identification in fluid specimen (e.g., circulating tumor cells in blood);		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
86153	Cell enumeration using immunologic selection and identification in fluid specimen (e.g., circulating tumor cells in blood); physician interpretation and report, when required		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
86294	Immunoassay for tumor antigen, qualitative or semiquantitative (e.g., bladder tumor antigen)	**BTA Stat** (Bion Diagnostics)- bladder tumor marker Covered only for dx: • C67.0 – C67.9 Malignant neoplasm of the bladder • D09.0 Carcinoma in situ of bladder • D49.4 Neoplasm of unspecified behavior of bladder Z85.51 Personal history of malignant neoplasm of bladder	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
86300	Immunoassay for tumor antigen, quantitative; CA 15-3 (27.29)		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
86301	Immunoassay for tumor antigen, quantitative; CA 19-9		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
86304	Immunoassay for tumor antigen, quantitative; CA 125		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
86305	Human epididymis protein 4 (HE4)		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
86316	Immunoassay for tumor antigen, other antigen, quantitative (e.g., CA 50, 72-4, 549), each		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
86352	Cellular function assay involving stimulation (e.g., mitogen or antigen) and detection of biomarker (e.g., ATP)		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
86356	Mononuclear cell antigen, quantitative (e.g., flow cytometry), not otherwise specified, each antigen		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
86386	Nuclear Matrix Protein 22 (NMP22), qualitative	**NMP22** (Alere) - bladder tumor marker, Covered only for dx: • C67.0 – C67.9 Malignant neoplasm of the bladder • D09.0 Carcinoma in situ of bladder • D49.4 Neoplasm of unspecified behavior of bladder • Z85.51 Personal history of malignant neoplasm of bladder	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
87901	Infectious agent genotype analysis by nucleic acid (DNA or RNA); HIV-1, reverse transcriptase and protease regions	**ViroSeq HIV-1 Genotyping System** (Abbott Molecular)	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
87902	Infectious agent genotype analysis by nucleic acid (DNA or RNA); Hepatitis C virus		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
87906	Infectious agent genotype analysis by nucleic acid (DNA or RNA); HIV-1, other region (e.g., integrase, fusion)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88120	Cytopathology, in situ hybridization (e.g., FISH), urinary tract specimen with morphometric analysis, 3-5 molecular probes, each specimen; manual	bladder tumor marker **UroVysion Bladder Cancer Kit** (Abbott Molecular) Covered only for dx: • C67.0 – C67.9 Malignant neoplasm of the bladder • D09.0 Carcinoma in situ of bladder • D49.4 Neoplasm of unspecified behavior of bladder • Z85.51 Personal history of malignant neoplasm of bladder	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88121	Cytopathology, in situ hybridization (e.g., FISH), urinary tract specimen with morphometric analysis, 3-5 molecular probes, each specimen; using computer-assisted technology		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88130	Sex chromatin identification; Barr bodies		OOS for eC - Not Covered	OOS for eC - Not Covered	OOS for eC - Not Covered
88182	Flow cytometry, cell cycle or DNA analysis		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88184	Flow cytometry, cell surface, cytoplasmic, or nuclear marker, technical component only; first marker		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88185	Flow cytometry, cell surface, cytoplasmic, or nuclear marker, technical component only; each additional marker (List separately in addition to code for first marker)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88187	Flow cytometry, interpretation; 2 to 8 markers		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

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88189	Flow cytometry, interpretation; 16 or more markers		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88230	Tissue culture for non-neoplastic disorders; lymphocyte		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88233	Tissue culture for non-neoplastic disorders; skin or other solid tissue biopsy		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88235	Tissue culture for non-neoplastic disorders; amniotic fluid or chorionic villus cells		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88237	Tissue culture for neoplastic disorders; bone marrow, blood cells		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88239	Tissue culture for neoplastic disorders; solid tumor		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88240	Cryopreservation, freezing and storage of cells, each cell line		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88241	Thawing and expansion of frozen cells, each aliquot		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88245	Chromosome analysis for breakage syndromes; baseline Sister Chromatid Exchange (SCE), 20-25 cells		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88248	Chromosome analysis for breakage syndromes; baseline breakage, score 50-100 cells, count 20 cells, 2 karyotypes (e.g., for ataxia telangiectasia, Fanconi anemia, fragile X)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88249	Chromosome analysis for breakage syndromes; score 100 cells, clastogen stress (e.g., diepoxybutane, mitomycin C, ionizing radiation, UV radiation)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

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88261	Chromosome analysis; count 5 cells, 1 karyotype, with banding		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88262	Chromosome analysis; count 15-20 cells, 2 karyotypes, with banding		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88263	Chromosome analysis; count 45 cells for mosaicism, 2 karyotypes, with banding		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88264	Chromosome analysis; analyze 20-25 cells		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88267	Chromosome analysis, amniotic fluid or chorionic villus, count 15 cells, 1 karyotype, with banding		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88269	Chromosome analysis, in situ for amniotic fluid cells, count cells from 6-12 colonies, 1 karyotype, with banding		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88271	Molecular cytogenetics; DNA probe, each (e.g., FISH)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88272	Molecular cytogenetics; chromosomal in situ hybridization, analyze 3-5 cells (e.g., for derivatives and markers)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88273	Molecular cytogenetics; chromosomal in situ hybridization, analyze 10-30 cells (e.g., for microdeletions)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88274	Molecular cytogenetics; interphase in situ hybridization, analyze 25-99 cells		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88275	Molecular cytogenetics; interphase in situ hybridization, analyze 100-300 cells		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

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88280	Chromosome analysis; additional karyotypes, each study		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88283	Chromosome analysis; additional specialized banding technique (e.g., NOR, C-banding)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88285	Chromosome analysis; additional cells counted, each study		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88289	Chromosome analysis; additional high resolution study		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88291	Cytogenetics and molecular cytogenetics, interpretation and report		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88299	Unlisted cytogenetic study	*Explanatory notes identifying specific test must accompany claim*	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88360	Morphometric analysis, tumor immunohistochemistry (e.g., Her-2/neu, estrogen receptor/progesterone receptor), quantitative or semiquantitative, each antibody; manual	p53 tumor marker?	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88361	Morphometric analysis, tumor immunohistochemistry (e.g., Her-2/neu, estrogen receptor/progesterone receptor), quantitative or semiquantitative, each antibody; using computer-assisted technology	eval of chemo drugs for invasive breast CA	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88363	Examination and selection of retrieved archival (i.e., previously diagnosed) tissue(s) for molecular analysis (e.g., KRAS mutational analysis)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88364	In situ hybridization (e.g., FISH), per specimen; each additional single probe stain procedure (List separately in addition to code for primary procedure)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
88365	In situ hybridization (e.g., FISH), each probe		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88366	In situ hybridization (e.g., FISH), per specimen; each multiplex probe stain procedure		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88367	Morphometric analysis, in situ hybridization (quantitative or semi-quantitative), using computer-assisted technology, per specimen; initial single probe stain procedure		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88368	Morphometric analysis, in situ hybridization (quantitative or semi-quantitative) each probe; manual		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88369	Morphometric analysis, in situ hybridization (quantitative or semi-quantitative), manual, per specimen; each additional single probe stain procedure (List separately in addition to code for primary procedure)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88373	Morphometric analysis, in situ hybridization (quantitative or semi-quantitative), using computer-assisted technology, per specimen; each additional single probe stain procedure (List separately in addition to code for primary procedure)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88374	Morphometric analysis, in situ hybridization (quantitative or semi-quantitative), using computer-assisted technology, per specimen; each multiplex probe stain procedure		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88377	Morphometric analysis, in situ hybridization (quantitative or semi-quantitative), manual, per specimen; each multiplex probe stain procedure		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88381	Microdissection (i.e., sample preparation of microscopically identified target); manual		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88387	Macroscopic examination, dissection, and preparation of tissue for non-microscopic analytical studies (e.g., nucleic acid-based molecular studies); each tissue preparation (e.g., a single lymph node)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required

CODE	DESCRIPTION	Alias/Test Name (Lab) *list not all inclusive*	COMMERCIAL PLANS	MEDICAID	PRIORITY MEDICARE
88388	Macroscopic examination, dissection, and preparation of tissue for non-microscopic analytical studies (e.g., nucleic acid-based molecular studies); in conjunction with a touch imprint, intraoperative consultation, or frozen section, each tissue preparation (e.g., a single lymph node) (List separately in addition to code for primary procedure)		OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
89240	Unlisted miscellaneous pathology test	*Explanatory notes identifying specific test must accompany claim*	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
88399	Unlisted surgical pathology procedure	*Explanatory notes identifying specific test must accompany claim*	OOS for eC- No PA required	OOS for eC- No PA required	OOS for eC- No PA required
89290	Biopsy, oocyte polar body or embryo blastomere, microtechnique (for pre-implantation genetic diagnosis); less than or equal to 5 embryos		PA by Priority Health	Not Covered	Not Covered
89291	Biopsy, oocyte polar body or embryo blastomere, microtechnique (for pre-implantation genetic diagnosis); greater than 5 embryos		PA by Priority Health	Not Covered	Not Covered
G9143	Warfarin responsiveness testing by genetic technique using any method, any number of specimen(s)		Out of Scope - Not Covered	Out of Scope - Not Covered	eC PA

VI. REFERENCES

1. *Genetic Testing Medical Policy,* Dean Health Plan, Madison, WI. April 2001
2. *Genetic Counseling/Genetic Testing/ Genetic Screening Medical Policy,* Care Choices, Farmington Hills, MI. December 2000.
3. *Genetic Testing (#0140) and Genetic Counseling (#0189) Medical Policies,* Aetna, July 2001
4. **HAYES technology assessments:** *First-Trimester Prenatal Screening Using Nuchal translucency Combined with Maternal PAPP-A and Free B-hCG levels.* December 12, 2005
5. First-trimester or second-trimester screening, or both, for Down's syndrome. N Engl J Med. 2005 Nov 10; 353(19):2001-11.
6. SURUSS in perspective. BJOG. 2004 Jun;111(6):521-31

7. Practical strategies in contingent sequential screening for Down syndrome. Prenat Diagn. 2005 Aug;25(8):645-52
8. A cost-effectiveness analysis of prenatal screening strategies for Down syndrome. Obstet Gynecol. 2005 Sep; 106(3):562-8. Erratum in: Obstet Gynecol. 2006 Jan;107(1):209
9. Genetics and Public Policy Center. Technical brief: Preimplantation Genetic Diagnosis. Updated June 2005. Accessed January 19, 2006. Available at URL address: http://www.dnapolicy.org/genetics/pgd.jhtml
10. Thornhill A, deDie-Smulders C., Geraedts J, Harper J, Harton G, Lavery S, Moutou C, Robinson M, Schmutzler A, Scriven P; Sermon K, Wilton L. ESHRE PGD Consortium 'Best practice guidelines for clinical preimplantation genetic diagnosis (PGD) and preimplantation genetic screening (PGS)'. Human Reproduction. 2004 Jan;20(1):35-48
11. Sermon K, Van Steirteghem A, Liebaers I. Preimplantation genetic diagnosis. Lancet. 2004 May 15; 363(9421):1633-41.
12. Preimplantation genetics diagnosis international society. Guidelines for good practice in PGD. published in RBMOnline 2004; 9(4). Accessed January 19, 2006. Available at URL address: http://www.pgdis.org/
13. Cigna healthcare coverage position policy # 0108 revised 7/15/05: accessed January 12, 2006 http://www.cigna.com/health/provider/medical/procedural/coverage_positions/medical/#P
14. Aetna Clinical Policy Bulletins - Prenatal Diagnosis of Genetic Diseases – Policy # 0358 http://www.aetna.com/cpb/data/CPBA0327.html
15. The Regence Group – BlueCross/BlueShield- Preimplantation Genetic Diagnosis Policy # 11 http://www.regence.com/trgmedpol/maternity/mat11.html
16. A multigene assay to predict recurrence of tamoxifen-treated, node-negative breast cancer. Paik S, Shak S, Tang G, Kim C, Baker J, Cronin M, Baehner FL, Walker MG, Watson D, Park T, Hiller W, Fisher ER, Wickerham DL, Bryant J, Wolmark N. N Engl J Med. 2004 Dec 30;351(27):2817-26. Epub 2004 Dec 10
17. Prognostic role of a multigene reverse transcriptase-PCR assay in patients with node-negative breast cancer not receiving adjuvant systemic therapy. Esteva FJ, Sahin AA, Cristofanilli M, Coombes K, Lee SJ, Baker J, Cronin M, Walker M, Watson D, Shak S, Hortobagyi GN. Clin Cancer Res. 2005 May 1; 11(9):3315-9.
18. Gene expression profiling and breast cancer care: What are the potential benefits and policy implications?Oestreicher N, Ramsey SD, Linden HM, McCune JS, Van't Veer LJ, Burke W, Veenstra DL. Genet Med. 2005 Jul-Aug;7(6):380-9
19. Application of DNA microarray technology in determining breast cancer prognosis and therapeutic response Brennan DJ, O'Brien SL, Fagan A, Culhane AC, Higgins DG, Duffy MJ, Gallagher WM. Expert Opin Biol Ther. 2005 Aug;5(8):1069-83
20. Prediction of cancer outcome with microarrays: a multiple random validation strategy. Michiels S, Koscielny S, Hill C Lancet. 2005 Feb 5-11;365(9458):488-92
21. Detection of stool DNA mutations before and after treatment of colorectal neoplasia. Cancer. 2006 Jan 15; 106(2):277-83.

22. Detection of colorectal cancer by a quantitative fluorescence determination of DNA amplification in stool. Neoplasia. 2004 Sep-Oct; 6(5):536-40.
23. Fecal DNA versus fecal occult blood for colorectal-cancer screening in an average-risk population. N Engl J Med. 2004 Dec 23;351(26):2704-14
24. Colorectal cancer screening using stool DNA analysis in clinical practice: early clinical experience with respect to patient acceptance and colonoscopic follow-up of abnormal tests. Clin Colorectal Cancer. 2006 Jan; 5(5):338-43.
25. The AmpliChip CYP450 Test: Principles, Challenges, and Future Clinical Utility in Digestive Disease. Clin Gastroenterol Hepatol. 2006 Jul; 4(7):822-30. Epub 2006 Jun 22.
26. Pharmacogenetics in drug regulation: promise, potential and pitfalls. Philos Trans R Soc Lond B Biol Sci. 2005 Aug 29; 360(1460):1617-38. Review
27. Applications of AmpliChip CYP450. Mol Diagn. 2005; 9(3):119-27.
28. Gene Tests http://www.genetests.org NIH sponsored website accessed 1/10/07.
29. BlueCross/BlueShield Regence Policy Laboratory Section - Genetic Testing Policy#20 accessed 1/10/07
30. Aetna Genetic testing policy 0140 accessed 1/10/07
31. Cigna Genetic Testing policy 0052 accessed 1/10/07
32. Trepanier A, et al: Genetic cancer risk assessment and counseling: recommendations of the National Society of Genetic Counselors. J Genet Counsel 13:83, 2004.
33. American Gastroenterological Association medical position statement on the diagnosis and management of celiac disease. Gastroenterology 2006 Dec;131(6): 1977-80
34. Mayo Clinic – Mayo Foundation for medical education and research Celiac Disease Diagnostic testing Algorithm 03/09 http://www.mayoclinic.com/health/celiac-disease/DS00319/DSECTION=tests%2Dand%2Ddiagnosis . Accessed 01/2010
35. Up-To-Date: **Genetic counseling and testing.** Last literature review version 19.2: May 2011. Accessed July 24, 2011
36. Faranes L, et al. Rapid whole-genome sequencing decreases infant morbidity and cost of hospitalization. NPJ Genom Med. 2018 Apr 4; 3:10. doi: 10.1038/s41525-018-0049-4.
37. Miller NA, et al. A 26-hour system of highly sensitive whole genome sequencing for emergency management of genetic diseases. Genome Med. 2015 Sep 30; 7:100. doi: 10.1186/s13073-015-0221-8.
38. Petrikin JE, et al. The NSIGHT1-randomized controlled trial: rapid whole-genome sequencing for accelerated etiologic diagnosis in critically ill infants. NPJ Genom Med. 2018 Feb 9; 3:6. doi: 10.1038/s41525-018-0045-8
39. Saunders CJ, et al. Rapid whole-genome sequencing for genetic disease diagnosis in neonatal intensive care units. Sci Transl Med. 2012 Oct 3; 4(154):154ra135. doi: 10.1126/scitranslmed.3004041.

APPENDIX A	
Conditions for which Genetic Counseling* is required or recommended prior to genetic testing:	
Genetic Counseling Required	**Genetic Counseling Recommended**
Hereditary Cancer Syndromes: including but not limited to BRCA, HNPCC, FAP, MYH, Cowden Syndrome, Li Fraumeni syndrome, Peutz-Jeghers syndrome, Ataxia Telangiectasia	**Prenatal screening:** serum screening, sequential screening, etc.
Pre-symptomatic testing: familial conditions including but not limited to Huntington's Chorea, Alzheimer's disease	**Carrier screening:** Individuals from ethnic groups recognized to be at increased risk for specific genetic disorders (e.g., African Americans for sickle cell anemia, Ashkenazi Jewish (eastern European) for Tay-Sachs disease)
Pre-implantation diagnosis: Pre-test discussion on conditions to be tested for.	**Diagnostic testing:** Tests to confirm or rule out suspected genetic conditions in symptomatic individuals in which confirming a diagnosis has the potential to alter the medical management for the individual, i.e., muscular dystrophy, spinal muscular atrophy, microdeletion syndromes.
Prenatal diagnosis: chorionic villus sampling (CVS), amniocentesis, MaterniT21™ PLUS	**Conditions identified by newborn screening**
Carrier testing: testing for carrier status when there is a known or suspected genetic condition in the family (i.e., cystic fibrosis carrier testing, Fragile X pre-mutation carrier testing, etc.)	
Pre and post testing of at-risk family members for cardiac conditions in which the proband (individual with specific genetic condition has been identified) has an identifiable mutation i.e., Long QT syndrome, hypertophic cardiomyopathy. Post test counseling for clinically symptomatic individuals.	