MEDICAL POLICY STATEMENT

Original Effective Date	Next Annual Review Date	Last Review / Revision Date
02/24/2015	02/24/2016	04/21/2015

Policy Name	Policy Number
Genetic Testing, Genetic Screening and Genetic Counseling	MM-0003

Medical Policy Statements prepared by CSMG Co. and its affiliates (including CareSource) are derived from literature based on and supported by clinical guidelines, nationally recognized utilization and technology assessment guidelines, other medical management industry standards, and published MCO clinical policy guidelines. Medically necessary services include, but are not limited to, those health care services or supplies that are proper and necessary for the diagnosis or treatment of disease, illness, or injury and without which the patient can be expected to suffer prolonged, increased or new morbidity, impairment of function, dysfunction of a body organ or part, or significant pain and discomfort. These services meet the standards of good medical practice in the local area, are the lowest cost alternative, and are not provided mainly for the convenience of the member or provider. Medically necessary services also include those services defined in any Evidence of Coverage documents, Medical Policy Statements, Provider Manuals, Member Handbooks, and/or other policies and procedures.

Medical Policy Statements prepared by CSMG Co. and its affiliates (including CareSource) do not ensure an authorization or payment of services. Please refer to the plan contract (often referred to as the Evidence of Coverage) for the service(s) referenced in the Medical Policy Statement. If there is a conflict between the Medical Policy Statement and the plan contract (i.e., Evidence of Coverage), then the plan contract (i.e., Evidence of Coverage) will be the controlling document used to make the determination.

For Medicare plans please reference the below link to search for Applicable National Coverage Descriptions (NCD) and Local Coverage Descriptions (LCD):

A. SUBJECT

Genetic Testing, Genetic Screening and Genetic Counseling

B. BACKGROUND

Recent advancements in our understanding of the human genome have contributed to the rapid expansion of identified genetic mutations. Supported by new technologies and commercially available measurement tools there are now an ever expanding number of genetic assays available for the purpose of genetic screening and genetic testing. In some clinical situations the results may be linked to proven diagnostic and/or therapeutic results.

Genetic tests that are CLIA/CAP approved are commercially available and may be employed across a widening range of clinical applications. These tests include the measurement of single defects as well as “panels” or collections of mutations. Measurement may contribute to, but is not limited to, the identification of individuals at risk for future disorders, guidance of therapeutic and/or management interventions in symptomatic or asymptomatic individuals, predicting prognosis for an established diagnosis and/or predicting the response to a specific therapy or treatment.

The ACCE Model Project has identified four spheres essential to analyzing the scientific value and applicability of genetic tests. These include, **A**nalytic validity, **C**linical validity, **C**linical utility and **E**thical, legal and social implications. (The first letters of these are combined into the acronym “ACCE”).

CareSource seeks to understand and apply clinical data as it applies to these four areas in order to identify genetic tests that can improve clinical outcomes. This process is supported by

evidence based and literature supported guidelines known as Milliman Care Guidelines (MCG) for Ambulatory Care Guidelines for Genetic Medicine (see table below).

For genetic tests not addressed by MCG CareSource utilizes independent assessments by nationally recognized technology organizations and other evidence based guidelines for the purpose of distinguishing tests that are safe and useful.

Genetic Counseling:
As outlined in the 19th edition of the Milliman Care Guidelines, Genetic Counseling plays an essential role in genetic testing and is required as part of its pre-certification.

During "Pre-testing" this process involves (but is not limited to) prospective evaluation of available genetic tests as well as education about the availability of alternatives, a careful assessment of individual patient risk(s) versus benefit(s);, a careful explanation of (oftentimes complex) clinical information to educate and promote informed decision making, a discussion of management options as well as potential ethical, legal, and psychosocial implications that may be involved.

"Post-testing" Genetic Counseling may include (but is not limited to) ensuring the appropriate interpretation and communication of results, counseling for adaptation to medical risk or condition, and coordination of care supporting the patient, family and other medical providers.

Note: For the purpose of this policy Genetic Counseling services may be provided by an independent genetic professional, including a Medical Geneticist, a board-certified genetic counselor, or in certain circumstances by a physician who by virtue of training and experience, and with sufficient clinical documentation in the patient record, is able to provide CareSource members with the necessary knowledge and skills to professionally fulfill these services.

C. DEFINITIONS

Analytic Validity: How well does a genetic test measure the properties or characteristics it is intended to measure
Clinical Laboratory Improvement Amendments (CLIA): Federal regulatory standards from 1988 applying to all clinical laboratory testing performed on humans in the US for the purpose of providing information for diagnosis, prevention or treatment of disease (excludes clinical trials and basic research).
College of American Pathologists (CAP): Leading organization of certified pathologists providing accreditation and quality assurance to clinical laboratories.
Clinical Validity: The diagnostic accuracy with which a test predicts the presence or absence of a clinical condition or predisposition.
Clinical Utility: How likely the test is to significantly improve patient outcomes, reflecting the balance between health-related benefits and/or harms that can ensue from using the information that the test provides.
Genetic Mutation: An alteration in a chromosome, gene and/or protein from its natural state.
Genetic Testing: Genetic or genomic testing (through individual tests or panels of tests) which may involve the analysis of human chromosomes, DNA, RNA and or other gene products (e.g., enzymes or other proteins), for the purpose of detecting inherited or somatic mutations, genotypes or phenotypes related to disease and health.
Genetic counseling: Services provided by a Clinical Geneticist, Certified Genetic Counselor [or other approved medical provider" who is "independent" and not employed by any clinical or genetic laboratory thereby bearing no conflict of interest with the entity performing the test(s).
Newborn Screening: A subset of genetic testing, usually in the early newborn period in an attempt to identify genetic disorders that are treatable early in life.

Prenatal Testing: A subset of genetic testing used to detect changes in the genes or chromosomes of a fetus prior to birth.

D. POLICY

CareSource will approve the use of genetic testing and consider its use as medically necessary in the following circumstances:

1. A relevant MCG policy with inclusion criteria for genetic testing has been published (per table A):
   - There is documentation of a careful assessment of patient risk factors and/or symptoms (including documented family history) which is related to the specific genetic defect(s) under consideration AND
   - The quality, safety, statistical and clinical validity is scientifically supported in the medical literature as endorsed by inclusion criteria of applicable Milliman Care Guideline(s) AND
   - The patient has received genetic counseling by an independent genetic professional with documentation of the medical rationale for necessity of genetic testing based on:
     - Careful assessment of family and medical histories to assess risk of disease occurrence or recurrence
     - Documentation that the patient has provided informed consent to the testing provider as evidenced by a clear statement delineating how results of the test will alter the medical management of the patient (including but not limited to, initiation of new therapy, alteration of existing therapy, determining level of surveillance, management of a pregnancy)

Note: Genetic testing through individual assays and/or genetic panels not identified as medically necessary by applicable Milliman Care Guidelines are not approved as a covered health benefit except in circumstances where coverage is mandated by state legislative and/or federal mandate(s).

2. A relevant MCG policy has been published but the current role of genetic testing "remains uncertain":

   Genetic testing through individual assays and/or genetic panels where the "current role remains uncertain" by applicable Milliman Care Guidelines are not approved as a covered medically necessary health benefit except in circumstances where coverage is mandated by state legislative and/or federal mandate(s) or when outlined by a specific CareSource policy.

3. A relevant MCG policy for genetic testing has not been published:

   Genetic test(s) and/or genetic panels not addressed by most current version of the Milliman Care Guidelines may be approved when the following criteria are met:
   - There is documentation of a careful assessment of patient risk factors and/or symptoms (including documented family history) **AND**
   - The patient has received genetic counseling by an independent genetic professional with documentation of the medical rationale for necessity of genetic testing based on:
     - Careful assessment of family and medical histories to assess risk of disease occurrence or recurrence
     - Documentation that the patient has provided informed consent to the testing provider as evidenced by a clear statement delineating how results of the test will alter the medical management of the patient (including but not limited to, initiation of new therapy, alteration of existing therapy, determining level of surveillance, management of a pregnancy) **AND**
     - The analytic validity, clinical validity and clinical utility of the test, or panel of tests can be established through evidence based and literature supported guidelines by

nationally recognized technology organizations. (CareSource routinely accesses reporting from the Hayes Genetic Test Index and the Genetic Testing Health Technology Assessment Info Service (HTAIS) of the ECRI Institute, as well as other recognized guideline sets).

Table A

MCG Policy Number	MCG Policy Title	Genes and Gene Panels
ACG: A-0499	Breast or Ovarian Cancer, Hereditary	BRCA1 and BRCA2 Genes
ACG: A-0532	Breast Cancer Gene Expression Assays	
ACG: A-0533	Lynch Syndrome	EPCAM, MLH1, MSH2, MSH6, and PMS2 Genes
ACG: A-0531	Genome-Wide Association Studies	
ACG: A-0534	Familial Adenomatous Polyposis	APC and MUTHY Genes, and Gene Panels
ACG: A-0535	Paraganglioma-Pheochromocytoma Syndromes, Hereditary	SDHB, SDHC, SDHD, and TMEM127 Genes
ACG: A-0581	Neurofibromatosis	NF1 and NF2 Genes
ACG: A-0582	Multiple Endocrine Neoplasia (MEN) Syndromes	MEN1 and RET Genes
ACG: A-0583	Von Hippel-Lindau Syndrome	VHL Gene
ACG: A-0584	Li-Fraumeni Syndrome	TP53 Gene
ACG: A-0585	Cowden Syndrome	PTEN Gene
ACG: A-0586	Retinoblastoma	RB1 Gene
ACG: A-0587	Warfarin Pharmacogenetics	CYP2C9, VKORC1, and CYP4F2 Genes
ACG: A-0588	Array-Based Comparative Genomic Hybridization (aCGH)	
ACG: A-0590	Alzheimer Disease	APP, PSEN1 and PSEN2 Genes
ACG: A-0591	Amyotrophic Lateral Sclerosis (ALS)	C9ORF72 and SOD1 Genes
ACG: A-0592	Ashkenazi Jewish Genetic Panel	
ACG: A-0593	Ataxia-Telangiectasia	ATM Gene
ACG: A-0594	Brugada Syndrome	CACNA1C, CACNB2, GPD1L, HCN4, KCND3, KCNE3, KCNJ8, SCN1B, SCN3B, and SCN5A Genes
ACG: A-0595	Canavan Disease	ASPA Gene
ACG: A-0596	Deafness, Nonsyndromic	GJB2, GJB6, POU3F4, PRPS1, and SMPX Genes
ACG: A-0597	Cystic Fibrosis	CFTR Gene and Mutation Panel
ACG: A-0598	Diabetes Mellitus	HNF4A, GCK, HNF1A, PDX1, HNF1B, NEUROD1, KLF11, CEL, PAX4, INS, BLK, ABCC8, EIF2AK3, FOXP3, KCNJ11, and PTF1A Genes
ACG: A-0599	Hemochromatosis	HFE Gene
ACG: A-0600	Factor V Leiden Thrombophilia	F5 Gene

ACG: A-0601	Malignant Melanoma, Familial	BAP1, CDK4, and CDKN2A Genes
ACG: A-0602	Fragile X-Related Disorders	FMR1 Gene
ACG: A-0603	Gaucher Disease	GBA Gene
ACG: A-0604	Hemoglobinopathies, Thalassemias and Sickle Cell Disease	HBA1, HBA2 and HBB Genes
ACG: A-0605	Huntington Disease	HTT Gene
ACG: A-0606	Lesch-Nyhan Syndrome	HPRT1 Gene
ACG: A-0607	Long QT Syndromes	ANK2, ANKB, CACNA1C, KCNE1, KCNE2, KCNH2, KCNJ2, KCNQ1, SCN4B, and SCN5A Genes
ACG: A-0608	Muscular Dystrophies (Duchenne, Becker)	DMD Gene
ACG: A-0609	Myotonic Dystrophy	DMPK and CNBP Genes
ACG: A-0610	Neuroblastoma	ALK, MYCN, and PHOX2B Genes and Gene Expression Profiling
ACG: A-0611	Niemann-Pick Disease (Acid Sphingomyelinase Deficiency)	SMPD1, NPC1, and NPC2 Genes
ACG: A-0612	Prostate Cancer	Genetic Profiles, BRCA1, BRCA2, HOXB13, MMR, PCA3, PTEN, and TMPRSS2-ETS Fusion Genes
ACG: A-0613	Prothrombin Thrombophilia	F2 Gene
ACG: A-0614	Tay-Sachs Disease and Variants	HEXA Gene
ACG: A-0615	Wilms Tumor	WT1 and WT2 Genes
ACG: A-0623	Heart Transplant Rejection Gene Expression Profiling (AlloMap)	
ACG: A-0624	Irinotecan Pharmacogenetics	UGT1A1 Gene
ACG: A-0627	Arrhythmogenic Right Ventricular Cardiomyopathy	ARVC Genes
ACG: A-0628	Inflammatory Bowel Disease	TPMT Gene
ACG: A-0629	Hyperhomocysteinemia	MTHFR Gene
ACG: A-0631	Clopidogrel Pharmacogenetics	CYP2C19 Gene
ACG: A-0632	Topographic Genotyping	PathFinderTG
ACG: A-0633	Hypertrophic Cardiomyopathy	Sarcomere Genes
ACG: A-0636	Catecholaminergic Polymorphic Ventricular Tachycardia	RYR2 and CASQ2 Genes
ACG: A-0638	BRACAnalysis Large Rearrangement Test (BART)	
ACG: A-0646	Pancreatitis, Hereditary	PRSS1 Gene
ACG: A-0647	Tamoxifen Pharmacogenetics	CYP2D6 Gene
ACG: A-0648	Dilated Cardiomyopathy	ANKRD1, DMD, GATAD1, LDB3, LMNA, MYBPC3, MYH7, RBM20, SCN5A, TNNI3, TNNT2, and TTN Genes
ACG: A-0649	Carbamazepine Pharmacogenetics	HLA Testing

ACG: A-0651	Colon Cancer Gene Expression Assays	
ACG: A-0652	Coronary Artery Disease Gene Expression Testing	
ACG: A-0653	Rasburicase Pharmacogenetics	G6PD Gene
ACG: A-0656	Coronary Artery Disease	KIF6 Gene
ACG: A-0657	Coronary Artery Disease	9p21 Allele
ACG: A-0658	Coronary Artery Disease Genetic Panel	
ACG: A-0659	Spinal Muscular Atrophy	SMN1 and SMN2 Genes
ACG: A-0665	5-Fluorouracil Pharmacogenetics	DPYD, MTHFR, and TYMS
ACG: A-0668	CADASIL (Cerebral Autosomal Dominant Ateriopathy with Subcortical Infarcts and Leukoencephalopathy)	NOTCH3 Gene
ACG: A-0669	Myeloproliferative Neoplasms	JAK2 and MPL Genes
ACG: A-0670	Melanoma Gene Expression Profiling	
ACG: A-0671	Parkinson Disease	ATP13A2, GBA, LRRK2, MAPT, PARK2, PARK7, PINK1, and SNCA Genes
ACG: A-0672	Telomere Analysis	
ACG: A-0673	Cancer of Unknown Primary: Gene Expression Profiling	
ACG: A-0681	Maple Syrup Urine Disease	BCKDHA, BCKDHB, and DBT Genes
ACG: A-0682	Bloom Syndrome	BLM Gene
ACG: A-0683	Fanconi Anemia	FANC Genes
ACG: A-0684	Glycogen Storage Disease, Type 1	G6PC and SLC37A4 Genes
ACG: A-0685	Familial Dysautonomia	IKBKAP Gene
ACG: A-0686	Mucolipidosis IV	MCOLN1 Gene
ACG: A-0687	Rett Syndrome	CDKL5, FOXG1 and MECP2 Genes
ACG: A-0688	Von Willebrand Disease	VWF Gene
ACG: A-0689	Familial Mediterranean Fever	MEFV Gene
ACG: A-0690	Malignant Hyperthermia Susceptibility	RYR1 Gene
ACG: A-0691	Charcot-Marie-Tooth Hereditary Neuropathy	EGR2, GDAP1, GJB1, LITAF, MFN2, MPZ, NEFL, PMP22, PRPS1, and PRX Genes
ACG: A-0692	Psychotropic Medicaiton Pharmacogenetics (AmpliChip Panel, CYP450 Polymorphisms)	BDNF, DRD, HTR, SLC6A4, and TPH1 Genes
ACG: A-0693	Proteomics (VeriStrat)	
ACG: A-0704	Hereditary Hemorrhagic Telangiectasia	ACVRL1, ENG and SMAD4 Genes
ACG: A-0705	MicroRNA Detection	
ACG: A-0706	Septin 9 (SEPT9) DNA Methylation Testing	
ACG: A-0707	Prader-Willi Syndrome DNA Methylation Testing	
ACG: A-0708	Angelman Syndrome	UBE3A Gene
ACG: A-0709	Proteomics	Ovarian Cancer Biomarker Panels (OVA1, ROMA)

ACG: A-0710	Whole Genome/Exome Sequencing	
ACG: A-0711	Thyroid Nodule Gene Expression Testing	
ACG: A-0712	Prostate Cancer Gene Expression Testing	
ACG: A-0724	Noninvasive Prenatal Testing	Cell-Free Fetal DNA
ACG: A-0725	Polycystic Kidney Disease	PDK1, PKD2 and PKHD1 Genes

For Medicare Plan members, reference the below link to search for Applicable National Coverage Descriptions (NCD) and Local Coverage Descriptions (LCD):

If there is no NCD or LCD present, reference the CareSource Policy for coverage.

CONDITIONS OF COVERAGE

HCPCS
CPT

AUTHORIZATION PERIOD

E. REVIEW/REVISION HISTORY

Date Issued: 02/24/2015
Date Reviewed: 02/24/2015, 04/21/2015
Date Revised: 04/21/2015 – Include MCG 19th Ed. revisions

F. REFERENCES

1. Genomic Testing: ACCE Model Process for Evaluating Genetic Tests http://www.cdc.gov/genomics/gtesting/ACCE/index.htm
2. Raby BA, Kohlman W, Venne V. Genetic counseling and testing. In: Tirnauer JS (Ed). UpToDate [database on the Internet]. Waltham (MA): UpToDate; 2014
3. Public Health Genomics: http://www.cdc.gov/genomics/gtesting/ACCE/acce_proj.htm
4. Genetic Counseling and Testing:
5. http://www.uptodate.com/contents/genetic-counseling-and testing?source=search_result&search=genetic+testing&selectedTitle=1%7E150
6. Milliman Care Guidelines (MCG): Ambulatory Care Guidelines for Genetic Medicine

Note: Effective 2/2015 CareSource will utilize the 19th edition of Milliman Care Guidelines' (Ambulatory Care: Genetic Medicine section) criteria when reviewing prior authorization request for coverage of genetic test(s). This policy statement clarifies and supplements the individual guidelines in this set.

The medical Policy Statement detailed above has received due consideration as defined in the Medical Policy Statement Policy and is approved.

Independent medical review – 1/2015