

Updated Panels

We are adding more than 650 unique genes to 55 panels covering 13 medical specialties.

This document provides detailed information about the changes to each updated panel. All orders created and placed in Nucleus or received by paper requisition on, or after, **October 30, 2021** will automatically receive the new panel content. Please also note that the panel tier for 7 of our panels has been updated according to the new gene number – the changes are indicated in the chart below.

We are here to help. If you have any questions about the update or how specific orders will be affected, please do not hesitate to contact us.

Cardiology Panels		56 genes added to 12 Cardiology Panels							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
CA1001	Aorta Panel	81410(1), 81411(1)	No change	53	52	Medium	No change	1	<i>PLOD3</i>
CA1601	Arrhythmia Panel	81413(1), 81414(1)	No change	62	58	Medium	No change	4	<i>PRKAG2 RBM20 SLC12A3 TANGO2</i>
CA1201	Cardiomyopathy Panel	81439, 81460, 81465	No change	217	214	Large	No change	3	<i>CACNA1C CHKB NDUFB11</i>
CA1301	Comprehensive Cardiology Panel	81439, 81460, 81465	No change	260	254	Large	No change	6	<i>CACNA1D CHKB GNB5 NDUFB11 SLC12A3 TANGO2</i>
CA1501	Congenital Structural Heart Disease Panel	81439(1)	No change	125	114	Medium	No change	11	<i>C2CD3 CASZ1 CDKN1C FKTN FLT4 LZTR1 MEGF8 NEXN PLD1 RECQL4 TWIST1</i>
CA2201	Dilated Cardiomyopathy (DCM) Panel	81439, 81460, 81465	No change	130	123	Large	Medium to Large	7	<i>ACADVL CHKB CPT2 DNAJC19 FKRFP NEXN SLC22A5</i>
CA0101	Ehlers-Danlos Syndrome Panel	81405 x2, 81406, 81408 x3, 81479	No change	41	32	Medium	No change	9	<i>ADAMTSL2 AEBP1 ATP6V1A ATP6V1E1 B3GALT6 C1R C1S CHST3 GORAB</i>
CA1101	Hyperlipidemia Panel	81405, 81406 x2, 81407, 81479	No change	20	18	Small	No change	2	<i>CYP27A1 GPD1</i>
CA1901	Hypertrophic Cardiomyopathy (HCM) Panel	81439, 81460, 81465	No change	92	84	Medium	No change	8	<i>CACNA1C CPT2 DES KRAS MAP2K1 MAP2K2 MTO1 VCL</i>
CA0301	Long QT Syndrome (LQTS) Panel	81414, 81404 x2, 81406 x2, 81407 x2, 81479	Changed from 81414, 81404 x2, 81406 x2, 81407, 81479	18	16	Small	No change	2	<i>SLC12A3 TRDN</i>
CA0801	Marfan Syndrome Panel	81405 x3, 81408 x3, 81406, 81479	No change	36	34	Medium	No change	2	<i>AEBP1 FLCN</i>
CA0501	Noonan Syndrome Panel	81442(1)	No change	36	35	Medium	No change	1	<i>BMP2</i>

Dermatology Panels		15 genes added to 3 Dermatology Panels							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
DE0801	Albinism Panel	81404, 81479	No change	26	23	Medium	Small to Medium	3	EDN3 EDNRB PAX3
IM0401	Dyskeratosis Congenita Panel	81479(1)	No change	15	12	Small	No change	3	ACD NAF1 POT1
CA0101	Ehlers-Danlos Syndrome Panel	81405 x2, 81406, 81408 x3, 81479	No change	41	32	Medium	No change	9	ADAMTSL2 AEBP1 ATP6V1A ATP6V1E1 B3GALT6 C1R C1S CHST3 GORAB
Ear, Nose & Throat Panels		49 genes added to 1 Ear, Nose & Throat Panels							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
EA0501	Comprehensive Hearing Loss and Deafness Panel	81430, 81431, 81460, 81465	No change	288	239	Large	No change	49	ABHD5 ACOX1 ACTB AMMECR1 ANLN ATP6V0A4 CISD2 EDNRA EFTUD2 FGFR2 FOXC1 GDF6 GREB1L HOXA2 KITLG KMT2D LHX3 MASP1 MCM2 NDRG1 NEFL NF2 NOG NR2F1 OPA1 PAX1 PCGF2 PEX11B PEX12 PEX13 PEX14 PEX2 PEX5 PEX7 PHYH PMP22 PTRPQ RAI1 REST ROR1 SERAC1 SH3TC2 SIX2 SLC44A4 SLC4A11 TBX1 TMEM126A TRRAP UBR1
Endocrinology Panels		29 genes added to 4 Endocrinology Panels							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
EN0201	Abnormal Genitalia/ Disorders of Sex Development Panel	81173, 81403, 81404 x4, 81405 x6, 81406 x4, 81407 x2, 81479	Changed from 81173, 81403, 81404 x3, 81405 x5, 81406 x4, 81407 x2, 81479	73	62	Medium	No change	11	FSHB HS6ST1 LEP LEPR POLR3B PROP1 RNF216 SOX2 CHD4 FGF17 NSMF
CA1101	Hyperlipidemia Panel	81405, 81406 x2, 81407, 81479	No change	20	18	Small	No change	2	CYP27A1 GPD
EN0301	Kallmann Syndrome Panel	81404 x2, 81405 x2, 81406 x2, 81407, 81479	Changed from 81405, 81406, 81407, 81479	31	17	Medium	Small to Medium	14	FSHB LEP LEPR LHB NR0B1 POLR3B PROP1 RNF216 SOX2 CHD4 DHCR7 FGF17 IL17RD NSMF
EN0601	MODY panel	81403, 81404 x3, 81405 x2, 81406 x2, 81407, 81479, 81460, 81465	No change	54	52	Medium	No change	2	GATA6 WFS1
Gastroenterology Panels		5 genes added to 1 Gastroenterology Panel							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
GA0501	Cholestasis Panel	81222, 81223, 81403, 81404 x3, 81405 x3, 81406 x4, 81407, 81479	Changed from 81222, 81223, 81403, 81404 x2, 81405 x2, 81406 x4, 81407, 81479	52	47	Medium	No change	5	CLDN1 LIPA MPV17 SLCO1B1 SLCO1B3

Hematology Panels

63 genes added to 5 Hematology Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
HE0801	Bone Marrow Failure Syndrome Panel	81162, 81317, 81319, 81298, 81300, 81295, 81297, 81292, 81294, 81403 x2, 81404 x5, 81405 x3, 81406 x5, 81408, 81479	No change	156	135	Large	No change	21	ALAS2 C15ORF41 CDAN1 GLRX5 GP1BA ITGA2B KCNN4 MECOM C6ORF25 MYH9 NAF1 PARN RPL26 SEC23B SLC19A2 SLC25A38 TUBB1 TBXAS1 OBFC1 ZCCHC8 POT1
HE1401	Comprehensive Hematology and Hereditary Cancer Panel	CPT will depend on type of hereditary cancer - per patient CPT coding	No change	369	348	Large	No change	21	CECR1 CD59 CTLA4 CTNNA1 GLRX5 GPR101 HAVCR2 HK1 HMOX1 KIF1B KCNN4 C6ORF25 NAF1 PGK1 RPL26 SMARCE1 STAT3 OBFC1 TBXAS1 TRIP13 ZCCHC8
HE0101	Comprehensive Hematology Panel	81162, 81218, 81238, 81249, 81351, 81317, 81319, 81307, 81298, 81300, 81292, 81294, 81295, 81297, 81363, 81364, 81259, 81269, 81403 x2, 81404 x5, 81405 x5, 81406 x11, 81407, 81408 x3, 81479	Changed from 81162, 81218, 81238, 81249, 81351, 81317, 81319, 81307, 81298, 81300, 81292, 81294, 81295, 81297, 81363, 81364, 81259, 81269, 81403 x2, 81404 x5, 81405 x4, 81406 x11, 81407, 81408 x3, 81479	270	253	Large	No change	17	CECR1 CD59 CTLA4 GLRX5 HAVCR2 HK1 HMOX1 KCNN4 C6ORF25 NAF1 PGK1 RPL26 STAT3 OBFC1 TBXAS1 ZCCHC8 POT1
IM0401	Dyskeratosis Congenita Panel	81479(1)	No change	15	12	Small	No change	3	ACD NAF1 POT1
ON0101	Hereditary Leukemia Panel	81162, 81218, 81292, 81294, 81295, 81297, 81298, 81300, 81317, 81319, 81351, 81403, 81404 x2, 81405, 81406 x5, 81408 x2, 81479	No change	42	41	Medium	No change	1	HAVCR2

Hereditary Cancer Panels

31 genes added to 5 Hereditary Cancer Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
HE1401	Comprehensive Hematology and Hereditary Cancer Panel	CPT will depend on type of hereditary cancer - per patient CPT coding	No change	369	348	Large	No change	21	<i>CECR1 CD59 CTLA4 CTNNA1 GLRX5 GPR101 HAVCR2 HK1 HMOX1 KIF1B KCNN4 C6ORF25 NAF1 PGK1 RPL26 SMARCE1 STAT3 OBFC1 TBXAS1 TRIP13 ZCCHC8</i>
ON1001	Comprehensive Hereditary Cancer Panel	CPT will depend on type of hereditary cancer - per patient CPT coding	No change	160	154	Large	No change	6	<i>GPR101 HAVCR2 KIF1B SMARCE1 CTNNA1 TRIP13</i>
ON0201	Hereditary Colorectal Cancer Panel	81435(1), 81436(1)	No change	23	21	Small	No change	2	<i>MLH3 CDH1</i>
ON1601	Hereditary Gastrointestinal Cancer Panel	81435(1), 81436(1)	No change	43	42	Medium	No change	1	<i>MLH3</i>
ON0101	Hereditary Leukemia Panel	81162, 81218, 81292, 81294, 81295, 81297, 81298, 81300, 81317, 81319, 81351, 81403, 81404 x2, 81405, 81406 x5, 81408 x2, 81479	No change	42	41	Medium	No change	1	<i>HAVCR2</i>

Immunology Panels

122 genes added to 5 Immunology Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
IM0201	Autoinflammatory Syndrome Panel	81404, 81479	No change	47	33	Medium	No change	14	<i>ADAM17 CECR1 COPA DNASE2 IL10RA DNASE1L3 IL10 IL10RB JAK1 POMP PSMB4 RIPK1 TTC7A UBA1</i>
HE0801	Bone Marrow Failure Syndrome Panel	81162, 81317, 81319, 81298, 81300, 81295, 81297, 81292, 81294, 81403 x2, 81404 x5, 81405 x3, 81406 x5, 81408, 81479	No change	156	135	Large	No change	21	<i>ALAS2 C15ORF41 CDAN1 GLRX5 GP1BA ITGA2B KCNN4 MECOM C6ORF25 MYH9 NAF1 PARN RPL26 SEC23B SLC19A2 SLC25A38 TUBB1 TBXAS1 OBFC1 ZCCHC8 POT1</i>
IM0401	Dyskeratosis Congenita Panel	81479(1)	No change	15	12	Small	No change	3	<i>ACD NAF1 POT1</i>

Immunology Panels continued

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
IM0801	Primary Immunodeficiency (PID) and Primary Ciliary Dyskinesia (PCD) Panel	81222, 81223, 81249, 81317, 81319, 81403, 81404 x4, 81405 x4, 81406 X5, 81407, 81408, 81479	Changed from 81222, 81223, 81249, 81317, 81319, 81403, 81404 x4, 81405 x4, 81406 x4, 81407, 81408, 81479	383	337	Large	No change	46	AMN AP3D1 B2M C5 C6 C7 C8A C8B C9 CCBE1 CCDC151 CD4 CDC42 CFAP57 COG6 CYP27A1 DGAT1 DIAPH1 DNAH8 DNAJB13 DNASE1L3 DSG1 FANCA FAT4 FCGR3A G6PC GUCY2C HAVCR2 HMOX1 IL6R IL7 IRF4 IRF7 LRRC56 MCM4 NFE2L2 PSMB4 POLA1 RANBP2 RELB SEC61A1 OBFC1 TAZ TLR3 TTC25 UBA1
M0301	Primary Immunodeficiency Panel	81249, 81222, 81223, 81317, 81319, 81403, 81404 x3, 81405 x3, 81406 x5, 81407, 81408, 81479	Changed from 81249, 81222, 81223, 81317, 81319, 81403, 81404 x3, 81405 x3, 81406 x4, 81407, 81408, 81479	336	298	Large	No change	38	AP3D1 B2M C5 C6 C7 C8A C8B C9 CCBE1 CD4 CDC42 COG6 CYP27A1 DGAT1 DIAPH1 DNASE1L3 DSG1 FANCA FAT4 FCGR3A G6PC GUCY2C HAVCR2 HMOX1 IL6R IL7 IRF4 IRF7 NFE2L2 POLA1 PSMB4 RANBP2 RELB SEC61A1 OBFC1 TAZ TLR3 UBA1

Malformations Panels

314 genes added to 9 Malformations Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
MA2701	Chondrodysplasia Punctata Panel	81479(1)	No change	10	9	Small	No change	1	MGP
MA4301	Comprehensive Growth Disorders / Skeletal Dysplasias and Disorders Panel	81167, 81216, 81236, 81307, 81403, 81404 x4, 81405 x15, 81406 x15, 81407 x3, 81408 x5, 81479	Changed from 81167, 81216, 81236, 81307, 81404 x4, 81405 x15, 81406 x14, 81407 x2, 81408 x4, 81479	510	374	Large	No change	136	ADAMTS2 AFF4 AGA ALX1 ANTXR2 ASCC1 ASXL1 BCOR BLM C2CD3 CC2D2A CDH3 CENPE CEP120 CEP290 C21ORF2 COG4 CRIPT CSF1R CWC27 CYP2R1 DDRGK1 DDX58 DNAJC21 DNMT3A DSE DVL3 DYNC2LI1 EDN1 EDNRA EFL1 EIF4A3 ERF EXOSC2 FERMT3 FGF9 FIG4 FKBP14 FTO FUCA1 FZD2 GALNS GCM2 GDF3 GDF6 GLB1 GLI1 GMNN GNAI3 GNPTAB GNPTG GNS GORAB GSC GUSB GZF1 HAAO HDAC4 HES7 HOXA11 HPGD HSPA9 IARS2 ICK IDH2 IFIH1 IFT81 IGF2 IL1RN INTU KCNJ2 KIAA0586 KIAA0753 KL LPIN2 MAN2B1 MANBA Mecom MEGF8 MEOX1 MET MKS1 MNX1 MYH3 NAGLU NBAS NEU1 OCRL OFD1 P4HB PAM16 PAX3 PCGF2 PEX5 PIGV PLCB4 PLEKHM1 PLK4 PLOD1 POLR1A POLR3A POLR3B RAB23 RIPPLY2 RPGRIP1L SC5D SETD2 SFRP4 SGSH SHH SLC10A7 SLC17A5 SMAD2 SMARCA4 SMARCB1 SNRPB SQSTM1 SRP54 SUMF1 TAB2 TAPT1 TBCE TBXAS1 FAM46A TGDS THPO TMEM165 TMEM216 TMEM67 TRAF3IP1 TREM2 TRPV6 TUBGCP6 UFSP2 WNT10B ZMPSTE24 ZSWIM6
MA2101	Comprehensive Short Stature Syndrome Panel	81404x3, 81405 x8, 81406 x8, 81407, 81479	No change	100	98	Medium	No change	2	BLM BMP2

Malformations Panels continued

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
MA3301	Comprehensive Skeletal Dysplasias and Disorders Panel	81236, 81403 x2, 81404 x3, 81405 x9, 81406 x11, 81407 x3, 81408 x5, 81479	Changed from 81236, 81403, 81404 x2, 81405 x8, 81406 x9, 81407, 81408 x4, 81479	411	251	Large	No change	160	AGA ALX1 ANTXR2 ARCN1 ARID1B ATR C2CD3 CC2D2A CDH3 CENPE CEP120 CEP152 CEP290 C21ORF2 COG1 COG4 CREB3L1 CRIPT CSF1R CTSA CYP2R1 DDX58 DHODH DLX5 DNAJC21 DNMT3A DONSON DSE DVL3 DYNC2L1 EDN1 EDNRA EFL1 EIF4A3 ERF FERMT3 FGF10 FGF9 FIG4 FKBP14 FN1 FTO FUCA1 FZD2 GALNS GCM2 GDF3 GDF6 GLB1 GMNN GNAI3 GNPTAB GNPTG GNS GORAB GSC GUSB GZF1 HAAO HDAC4 HES7 HOXA11 HPGD HRAS HSPA9 IARS2 ICK IDH2 IFIH1 IFITM5 IFT52 IFT57 IFT81 IGF2 IL1RN INTU KCNJ2 KIAA0586 KIAA0753 KL KYNU LFNG LPIN2 MAP2K1 MAP3K7 MBTPS2 MECOM MEGF8 MEOX1 MET MKS1 MNX1 MYH3 NBAS NOTCH1 OFD1 P4HB PAM16 PAX3 PDE3A PEX5 PIGV PITX1 PLCB4 PLEKHM1 PLOD1 POC1A POLR1A POLR3A POLR3B POP1 RAB23 RBBP8 RBM8A RIPPLY2 RGRIP1L RSPRY1 SALL1 SALL4 SC5D SEC24D SETD2 SFRP4 SGMS2 SHH SLC10A7 SLC17A5 SMAD2 SMARCA4 SMARCB1 SMARCE1 SNRPB SPARC SQSTM1 SRP54 SUMF1 TAB2 TAPT1 TBCE TBX5 TBXAS1 TCTEX1D2 FAM46A TGDS THPO TMEM165 TMEM216 TMEM67 TONSL TRAF3IP1 TREM2 TRPV6 UFSP2 WNT10B WNT7A XRCC4 XYLT2 ZMPSTE24 ZSWIM6 SGSH
MA3001	Osteogenesis Imperfecta Panel	81404, 81406 x2, 81408 x2, 81479	No change	33	30	Medium	No change	3	P4HB SLC29A3 TAPT1
MA2001	Osteopetrosis and Dense Bone Dysplasia Panel	81406, 81408, 81479	No change	27	25	Medium	Small to Medium	2	FERMT3 PLEKHM1
MA1301	Skeletal Dysplasia with Abnormal Mineralization Panel	81404, 81405, 81406, 81408 x2, 81479	No change	36	34	Medium	No change	2	CYP2R1 DMP1
MA1701	Spondylometaphyseal / Spondyloepi-(meta)-physeal Dysplasia Panel	81479(1)	No change	36	30	Medium	No change	6	POP1 FN1 NANS PAM16 TONSL UFSP2
MA4201	Vascular Malformations Panel	81321(1), 81323(1), 81405(2), 81406(2), 81479(1)	No change	16	14	Small	No change	2	EPHB4 GDF2

Metabolic Disorders Panels

66 genes added to 2 Metabolic Disorders Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
ME0701	Comprehensive Metabolism Panel	81161, 81403 x3, 81404 x18, 81405 x43, 81406 x57, 81407 x4, 81408 x4, 81479, 81460, 81465, 81440	Changed from 81403 x3, 81404 x15, 81405 x37, 81406 x53, 81407 x4, 81408 x3, 81479, 81460, 81465, 81440	505	476	Large	No change	29	ATP2A1 B3GALNT2 B4GAT1 CAPN3 CASQ1 CHKB CTDPI DAG1 DMD DNAJB6 EMD FDX1L FHL1 GMPPB LARGE POMGNT1 POMGNT2 POMK POMT1 POMT2 SGCA SGCB SGCD SGCG SIL1 STAC3 TCAP TNPO3 TRIM32
ME1401	Metabolic Myopathy and Rhabdomyolysis Panel	81161, 81404 x7, 81405 x15, 81406 x12, 81407 x2, 81408 x3, 81479, 81460, 81465	Changed from 81404 x4, 81405 x7, 81406 x8, 81407 x2, 81408 x2, 81479, 81460, 81465	127	90	Large	Medium to Large	37	ATP2A1 B3GALNT2 B4GAT1 CAPN3 CASQ1 CHKB CTDPI DAG1 DGUOK DMD DNAJB6 DPM1 DPM2 EMD FDX1L FHL1 GMPPB LAMA2 LAMP2 LARGE PDSS2 PHKB PNPLA2 POMGNT1 POMGNT2 POMK POMT1 POMT2 SGCA SGCB SGCD SGCG SIL1 STAC3 TCAP TNPO3 TRIM32

Nephrology Panels		46 genes added to 6 Nephrology Panels							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
KI0701	Ciliopathy Panel	81404, 81405 x2, 81406 x4, 81407 x3, 81408 x2, 81479	No change	119	107	Medium	No change	12	ADAMTS9 ARL3 ATXN10 CEP55 FAN1 ICK IFT57 IFT74 INTU PIBF1 SUFU XPNPEP3
KI0901	Cystic Kidney Disease Panel	81403, 81404 x2, 81405 x4, 81406 x9, 81407 x4, 81408 x3, 81479	No change	43	41	Medium	No change	2	PRKCSH SEC63
KI2201	Nephrolithiasis Panel	81404, 81405 x2, 81406 x4, 81407, 81479	Changed from 81404, 81405, 81406, 81407, 81479	45	35	Medium	No change	10	ATP7B BSND CLCNKA CLCNKB CLPB FOXI1 MAGED2 MOCS2 PRPS1 UMOD
KI0401	Nephrotic Syndrome Panel	81404, 81405 x2, 81406 x4, 81407 x4, 81408 x2, 81479, 81460, 81465	Changed from 81405 x2, 81406 x3, 81407 x4, 81408 x2, 81479, 81460, 81465	96	81	Medium	No change	15	COQ6 CUBN LAGE3 LYZ NUP133 NUP205 NUP85 PAX2 PDSS2 TBC1D8B TP53RK TPRKB TRIM8 TTR WDR4
KI2101	Polycystic Kidney Disease Panel	81404, 81405, 81406(3), 81407(2), 81408(1), 81479(1)	No change	13	12	Small	No change	1	SEC61A1
KI1201	Primary Ciliary Dyskinesia Panel	81222, 81223, 81479	No change	47	41	Medium	No change	6	CCDC151 CFAP57 DNAH8 DNAJB13 LRRC56 TTC25
Neurology Panels		256 genes added to 6 Neurology Panels							
Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
NE2101	Ataxia Panel	81286, 81189, 81404 x6, 81405 x10, 81406 x15, 81407 x5, 81408 x3, 81479 , 81460, 81465	Changed from 81286, 81189, 81404 x5, 81405 x9, 81406 x11, 81407 x4, 81408 x3, 81479 , 81460, 81465	257	210	Large	No change	47	AARS2 ABCA2 ABCD1 ATP13A2 ATP7B AUH CACNA2D2 CHCHD10 CLN6 CLN8 CLPB COQ2 COQ4 CTBP1 CTDP1 CTSA CYP7B1 DNAJC5 HEXB KIF5A LRSAM1 MGME1 NKX2-1 NPC1 NPC2 PANK2 PEX10 PEX16 PEX2 PEX3 PEX6 PMM2 RORA SAMD9L SH3TC2 SLC17A5 SLC25A15 SPG20 SPG11 SQSTM1 STXBPI SUOX TDP2 TRAPPC11 VPS13D VWA3B XRCC1
NE1301	Charcot-Marie-Tooth Neuropathy Panel	81448(1), 81460, 81465	Changed from 81448(1)	153	105	Large	Medium to Large	48	CYP27A1 DNAJB2 FBXO38 GSN MPV17 MT-ATP6 MT-ATP8 MT-CO1 MT-CO2 MT-CO3 MT-CYB MT-ND1 MT-ND2 MT-ND3 MT-ND4 MT-ND4L MT-ND5 MT-ND6 MT-RNR1 MT-RNR2 MT-TA MT-TC MT-TD MT-TE MT-TF MT-TG MT-TH MT-TI MT-TK MT-TL1 MT-TL2 MT-TM MT-TN MT-TP MT-TQ MT-TR MT-TS1 MT-TS2 MT-TT MT-TV MT-TW MT-TY PMP2 PNKP POLG2 SLC52A2 SLC52A3 UBA1

Neurology Panels continued

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
NE1001	Comprehensive Epilepsy Panel	81419(1) , 81460, 81465	No change	511	416	Large	No change	95	AARS ACY1 ADNP ALG6 ARV1 ATAD1 ATP1A1 ATP1A2 BCKDK CACNA1G CACNA2D2 CAD CAMK2B CARS2 COL4A2 COQ2 COQ4 CPLX1 CUX2 DEAF1 DHDDS DIAPH1 DMXL2 DOLK DPAGT1 DPM1 DPM2 DYNC1H1 EML1 FKTN GABRB1 GCSH GLS GLUD1 GRIN2D GUF1 IER3IP1 IFIH1 ITPA KCNJ10 KIAA1715 KIF5A KIF5C LIAS LMNB2 MOCS2 NPRL2 NR2F1 NSDHL NTRK2 OCLN PACS1 PACS2 PFAFH1B1 PEX1 PEX10 PEX12 PEX13 PEX14 PEX16 PEX19 PEX2 PEX26 PEX3 PEX5 PEX6 PRICKLE2 PRUNE PSAT1 RAB11A RAB11B RHOBTB2 RNF13 RORA RUSC2 SETBP1 SETD1B SGSH SLC1A2 SLC35A1 SLC6A5 SSR4 STRADA TANGO2 TK2 TRIT1 TSFM TUBA1A TUBB2A TUBB2B UBTF YWHAG ZDHHC9 ZNHIT3 ZSWIM6
NE0701	Comprehensive Muscular Dystrophy / Myopathy Panel	81161, 81336, 81402, 81404 x4, 81405 x10, 81406 x15, 81407 x4, 81408 x6, 81401 x5, 81479, 81460, 81465	Changed from 81161, 81402, 81404 x4, 81405 x3, 81406 x12, 81407 x4, 81408 x6, 81401 x5, 81479, 81460, 81465	161	125	Large	Medium to Large	36	ACAD9 ACADVL ADCK3 B4GAT1 CASQ1 COQ2 DAG1 DGUOK DPM3 FLAD1 GBE1 GYG1 HNRNPD1 ISCU LAMP2 MSTO1 PGK1 PHKA1 PHKB PLEC POLG2 PYGM RRM2B SCN4A SIL1 SLC22A5 SLC25A20 STAC3 SUCLA2 SUCLG1 TANGO2 TIA1 TSFM TYMP SMN1 SMN2
OP1301	Neuro-Ophthalmology Panel	81404 x2, 81405 x5, 81406 x7, 81407, 81479, 81460, 81465	No change	97	87	Medium	No change	10	ISCA2 MGME1 NARS2 NDUFAF3 PDSS1 SLC19A2 SLC19A3 SLC52A2 SNX10 SUCLA2
NE1501	Parkinson Disease Panel	81405 x4, 81406 x6, 81408, 81479, 81460, 81465	Changed from 81405 x3, 81406 x3, 81408, 81479, 81460, 81465	82	62	Medium	No change	20	ATP7B C19ORF12 CHCHD10 CHCHD2 CP CSF1R DCTN1 DNAJC12 DNAJC5 FTL GBA GRN NUS1 PANK2 PDE10A PDE8B POLG PSEN1 RAB39B SLC30A10

Ophthalmology Panels

56 genes added to 5 Ophthalmology Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
DE0801	Albinism Panel	81404, 81479	No change	26	23	Medium	Small to Medium	3	EDN3 EDNRB PAX3
OP1301	Neuro-Ophthalmology Panel	81404 x2, 81405 x5, 81406 x7, 81407, 81479, 81460, 81465	No change	97	87	Medium	No change	10	ISCA2 MGME1 NARS2 NDUFAF3 PDSS1 SLC19A2 SLC19A3 SLC52A2 SNX10 SUCLA2
OP0301	Optic Atrophy Panel	81405, 81406 x6, 81407, 81479, 81460, 81465	No change	76	68	Medium	No change	8	ISCA2 MGME1 NARS2 NDUFAF3 PDSS1 SLC19A2 SLC19A3 SUCLA2
OP0801	Retinal Dystrophy Panel	81434, 81460, 81465	No change	351	322	Large	No change	29	ABCD1 AMACR ARR3 CEP83 CLN5 CLN6 CLN8 COQ2 CTSD DNAJC5 DYNC2H1 EXOSC2 GPR143 ISPD LAMA1 NAGLU OCA2 OPN1SW PDSS1 PDSS2 PLK4 PPT1 SGSH SLC45A2 TPP1 TUBGCP4 TUBGCP6 TYR TYRP1
OP0901	Retinitis Pigmentosa Panel	81434, 81460, 81465	No change	159	153	Large	No change	6	CACNA1F CNGB3 DYNC2H1 RD3 RP1L1 TIMP3

Genetic Testing Program Panels 173 genes added to 3 Genetic Testing Program Panels

Test code	Test name	CPT coding	CPT coding change	New gene number	Previous gene number	Panel tier	Panel tier change	Number of added genes	List of added genes
NE2401	Beyond Paediatric Epilepsy Panel (available in Europe and the Middle East)	-	-	511	416	Large	No change	95	AARS ACY1 ADNP ALG6 ARV1 ATAD1 ATP1A1 ATP1A2 BCKDK CACNA1G CACNA2D2 CAD CAMK2B CARS2 COL4A2 COQ2 COQ4 CPLX1 CUX2 DEAF1 DHDDS DIAPH1 DMXL2 DOLK DPAGT1 DPM1 DPM2 DYNC1H1 EML1 FKTN GABRB1 GCSH GLS GLUD1 GRIN2D GUF1 IER3IP1 IFIH1 ITPA KCNJ10 KIAA1715 KIF5A KIF5C LIAS LMNB2 MOCS2 NPRL2 NR2F1 NSDHL NTRK2 OCLN PACS1 PACS2 PAFAH1B1 PEX1 PEX10 PEX12 PEX13 PEX14 PEX16 PEX19 PEX2 PEX26 PEX3 PEX5 PEX6 PRICKLE2 PRUNE PSAT1 RAB11A RAB11B RHOBTB2 RNF13 RORA RUSC2 SETBP1 SETD1B SGSH SLC1A2 SLC35A1 SLC6A5 SSR4 STRADA TANGO2 TK2 TRIT1 TSFM TUBA1A TUBB2A TUBB2B UBTF YWHAG ZDHHC9 ZNHIT3 ZSWIM6
OP3801	My Retina Tracker Program Panel (available in the United States)	-	-	351	322	Large	No change	29	ABCD1 AMACR ARR3 CEP83 CLN5 CLN6 CLN8 COQ2 CTSD DNAJC5 DYNC2H1 EXOSC2 GPR143 ISPD LAMA1 NAGLU OCA2 OPN1SW PDSS1 PDSS2 PLK4 PPT1 SGSH SLC45A2 TPP1 TUBGCP4 TUBGCP6 TYR TYRP1
EA0601	Resonate Program Panel (available in the United States)	-	-	288	239	Large	No change	49	ABHD5 ACOX1 ACTB AMMECR1 ANLN ATP6V0A4 CISD2 EDNRA EFTUD2 FGFR2 FOXC1 GDF6 GREB1L HOXA2 KITLG KMT2D LHX3 MASP1 MCM2 NDRG1 NEFL NF2 NOG NR2F1 OPA1 PAX1 PCGF2 PEX11B PEX12 PEX13 PEX14 PEX2 PEX5 PEX7 PHYH PMP22 PTPRQ RAI1 REST ROR1 SERAC1 SH3TC2 SIX2 SLC44A4 SLC4A11 TBX1 TMEM126A TRRAP UBR1

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