Cleveland Clinic

Cleveland Clinic Laboratories

Technical Update • September-October 2014

Cleveland Clinic Laboratories is dedicated to keeping you updated and informed about recent testing changes. That's why we are happy to provide this technical update on a monthly basis.

Recently changed tests are **bolded**, and could include revisions to methodology, reference range, days performed or CPT code. For your convenience, tests are listed alphabetically and the order and billing codes are provided.

If you wish to compare the new information with previous test demographics, refer to the Test Directory, which can be accessed at clevelandcliniclabs.com.

Deleted tests and new tests are listed separately. Please update your database as necessary. For additional detail, contact Client Services at 216.444.5755 or 800.628.6816 or via email at clientservices@ccf.org.

Test Update Page #	Summary of Changes by Test Name	Order Code	Billing Code	Name Change	New Test	Test Discontinued	Special Information	Specimen Requirement	Component Change	Methodology	Reference Range	Days Performed/Reported	CPT	Fee
3	5-Fluorouracil (5-FU) Toxicity, Chemotherapeutic Response, 5 Mutations				■			■	■					
16	5-Hydroxyindoleacetic Acid, Urine					■								
8	5-Hydroxyindoleacetic Acid, Urine 24 Hour				■									
8	5-Hydroxyindoleacetic Acid, Urine Random				■									
3	ACTH Stimulation Test for 21-Hydroxylase										■			
4	Allergen, Respiratory Region 8									■				
9	Alpha-1-Antitrypsin Serum Level and SERPINA1 Targeted Genotyping				■									
4	Amitryptyline/Nortiptyline										■			
9	Barbiturates Confirmation, Urine				■									
9	Body Fluid Culture and Stain				■									
9	Bronchoscopy Culture and Stain				■									
4	Buprenorphine, Quant Urine									■				
9	C9orf72 Expansion Assay				■									
4	Catecholamines, Fract. Plasma								■					
4	Catecholamines, Fract. Tilt								■					
10	Catheter Tip Cultue				■									
4	Chromagranin A											■		
10	Clobazam				■									
4	CMV PCR, Bone Marrow								■		■	■		
15	Cryptococcus Ag Detection													■
4	Cryptosporidia Examination								■			■		
10	Cystic Fibrosis Respiratory Culture				■									
4, 15	Cyto P450 2C19 Genotype								■		■	■		■
5	Cyto P450 2D6 Geno								■		■	■		

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16	Diagnostic CFTR Intron 8					■								
10	Ear Culture				■									
10	Ear Culture and Stain				■									
11	Eye Culture				■									
11	Eye Culture and Stain				■									
5	Fentanyl and Metabolite, Urine							■	■	■	■	■		
12	Fibrospect II				■									
12	FISH for Angiosarcoma MYC Amplification				■									
5	Flow Cytometry for Myeloma						■						■	
5	Hemoglobinopathy Evaluation								■					
12	Histoplasma Antigen by EIA, Body Fluid				■									
12	Histoplasma Antigen by EIA, Serum				■									
16	Histoplasma Capsulatum Antigen					■								
13	HIV-1 RNA, Qual TMA				■									
13	HIV-2 Antibody Confirmation, Serum				■									
16	HIV-2 IgG Abs, Confirmation					■								
6	HLA-B27							■						
6	IDH1 and IDH2 Mutation Analysis, Exon 4							■		■		■		
6	IgG Subclass (IG1234)										■	■		
6	IgG Subclass (IGG4)										■	■		
6	IgG Subclass (IGGSUB)										■	■		
16	Immunoglobins, Fluid					■								
16	Immunoglobins, Urine					■								
6	Inhibin B											■		
6	Inner Ear 68KD Ab							■						
16	Legionella Antibodies					■								
6	Leukocyte Alkaline Phosphatase Stain							■						
16	Monoclonal Protein, Fluid					■								
13	MRSA/Staph Aureus Culture Screen				■									
6	Mucin			■										
6	Neurofibromatosis Type 1, Comprehensive												■	
6	Neutrophil Cytoplasmic Antibody									■				
7	Ova and Parasite Exam						■					■		
7	Ova and Parasite Screen						■					■		
13	OVA1			■										
7	Plasminogen Activator Inhibitor			■										
7	PRO-PredictR TPMT									■				
16	Protein Electrophoresis, Fluid					■								
7	Proteinase 3 Autoantibodies			■										
13	Reducing Substances, Urine				■									
16	Respiratory Synctial Virus Abs IgG and IgM					■								
7, 15	Routine Body Fluid Analysis									■				■
13	Sinus Culture and Stain				■									
7	Synovial Fluid, Routine Analysis									■				

Test Update Page #	Summary of Changes by Test Name	Order Code	Billing Code	Name Change	New Test	Test Discontinued	Special Information	Specimen Requirement	Component Change	Methodology	Reference Range	Days Performed/Reported	CPT	Fee
15	T Cell V-Beta Flow Cytometry						■							■
16	Tramadol and Metabolite, Quant (TRACON)						■							
14	Tramadol and Metabolite, Quant (TRAQNT)				■									
16	Tramadol Screen						■							
7	Vitamin A										■			
7	Vitamin D2/D3, Serum							■						
16	VMA, Urine						■							
14	VMA, Urine 24 Hour				■									
14	VMA, Urine Random				■									
14	Voltage Gated Potassium Channel Ab				■									
8	Warfarin Sensitivity Genotype							■		■		■	■	
15	Wound Culture and Stain				■									

Test Changes

Test Name	Order Code	Billing Code	Change	Effective Date
5-Fluorouracil (5-FU) Toxicity, Chemotherapeutic Response, **5** Mutations	5FLUO	89425	**Name:** 5-Fluorouracil (5-FU) Toxicity, Chemotherapeutic Response, **5** Mutations. **Components:** Tox,Response-DPYD c.1679T>G Tox,Response-DPYD c.2846A>T Tox,Response-DPYD c.1905+1G>A Tox,Response-TYMS 3'UTR Genotype Tox,Response-TYMS 5'TSER Genotype **Clinical Info: Clinical Sensitivity and Specificity: Estimated at 31 percent for the DYPD variants analyzed.** Analytical Sensitivity and Specificity: 99%. Useful for evaluating toxicity and tumor response in patients receiving 5-fluorouracil or capecitabine treatment for colorectal adenocarcinoma.	11/17/2014
ACTH Stimulation Test for 21 - Hydroxylase	AS21	82059	**Reference Ranges:** **Hydroxyprogest, Basal [Result Code: HPRG0]:** **Female: 1D: 20-200 ng/dL** **Female: 1M: 30-110 ng/dL** **Female: 7M: 10-50 ng/dL** **Female: 1yr: 0-50 ng/dL** **Female: 4yr: 0-30 ng/dL** **Female: 7yr: 0-40 ng/dL** **Female: 10yr: 0-30 ng/dL** **Female: 13yr: 0-70 ng/dL** **Female: 16yr: 0-90 ng/dL** **Male: 1D: 50-190 ng/dL** **Male: 1M: 40-160 ng/dL** **Male: 7M: 10-40 ng/dL** **Male: 1yr: 0-20 ng/dL** **Male: 4yr: 0-30 ng/dL** **Male: 7yr: 0-50 ng/dL** **Male: 10yr: 0-30 ng/dL** **Male: 13yr: 20-80 ng/dL** **Male: 16yr: 10-100 ng/dL** **Male: 19yr: 40-180 ng/dL** **Hydroxyprogest, 60 min [Result Code: HPRG60]:** **0-99 Years: 0 ng/dL**	9/3/2014

Test Changes (cont.)

Test Name	Order Code	Billing Code	Change	Effective Date
Allergen, Respiratory Region 8	RESPR8	90027	**Components: Hickory/ Pecan Tree**	9/30/2014
Amitriptyline/Nortriptyline	AMINOR	82138	**Reference Range:** Urgent Range - 0-99 years: **>500 ng/mL**	11/5/2014
Buprenorphine, Quant Urine	UQNTBU	89916	**Add component(s): Quantitative Pain Panel, Urine - Creatinine, Oxidants, pH, Specific Gravity.**	10/20/2014
Catecholamines, Fract. Plasma	PLCAT	41000	**Specimen Volume: 3.0 mL (2.3 mL minimum)**	9/2/2014
Catecholamines, Fract. Tilt	TPLCAT	81728	**Specimen Volume: 3.0 mL (2.3 mL minimum)**	9/2/2014
Chromagranin A	CHROMA	76178	**Reported: 4-7** Days	11/20/2014
CMV PCR, Bone Marrow	CMVBM	89659	**Specimen Requirements: 1.0 mL** Bone marrow - EDTA (Lavender - **0.5 mL minimum**); Refrigerated. **Methodology: Qualitative Polymerase Chain Reaction** **Clinical Info: Detects cytomegalovirus in bone marrow but does not quantify viral load.** **Days Performed: Sunday**-Saturday **Stability:** Refrigerated: **72** Hours Frozen: **Unacceptable** Ambient: **8** Hours	10/2/2014
Cryptosporidia Examination	CRYSPO	89919	**Clinical Info:** The Cryptosporidium test uses microscopic staining methods (Modified Acid Fast) to rule out infection due to Cryptosporidium, Cyclospora and **Cystoisospora** sp. in stool. Infection with these agents generally occurs through ingestion of contaminated water or food and causes diarrhea. Immunocompromised patients are more susceptible to infection. One negative result does not rule out the possibility of infection. **Days Performed: Monday-Friday** **Reported: 1-7** Days **Alias: Cystoisopora Examination**	10/9/2014
Cyto P450 2C19 Genotype	2C19PL	88307	**Specimen Requirements: 3.0 mL Whole blood - EDTA (Lavender - 1.0 mL minimum);** Refrigerated. **Alternate - 3.0 mL Whole blood ACD A or B (Yellow - 1.0 mL minimum);** Refrigerated. **Special Info: May aid in dose planning for clopidogrel and other drugs metabolized by CYP2C19.** **Component(s): CYP2C19, Variant 1, CYP2C19 Variant 2, CYP2C19 Predicted Phenotype** **Methodology: Polymerase Chain Reaction (PCR)** **Clinical Info: Background Information for Cytochrome P450 2C19 (CYP2C19) 9 Variants: Characteristics: Impaired drug metabolism causing adverse drug reactions or lack of drug response. Drugs metabolized by CYP2C19 include clopidogrel, S-mephenytoin, diazepam, R-warfarin, some antidepressants (eg, citalopram, amitriptyline, clomipramine), proton pump inhibitors (eg, omeprazole, lansoprazole), and antimalarials (eg, chloroguanide). Inheritance: Autosomal recessive. Cause: CYP2C19 allelic variants. Negative: No variants detected is predictive of *1 functional alleles and normal enzymatic activity. Variants Tested: (Variants are numbered according to NM_000769 transcript). Decreased function: *9 (c.431G>A); *10 (c.680C>T). Non-functional: *2 (c.681G>A), *3 (c.636G>A), *4 (c.1A>G), *6 (c.395G>A), *7 (c.819+2T>A), *8 (c.358T>C). Increased function: *17 (c.-806C>T; increased gene transcription). Incidence of Poor Metabolizer Phenotype: 4 percent of Caucasians, 5 percent of African Americans, and up to 25 percent of Asians. Penetrance: Drug dependent. Clinical Sensitivity: 99 and 87 percent of clinically significant variants detected in Asians and Caucasians respectively; sensitivity is unknown in other ethnicities. Analytical Sensitivity and Specificity: 99 percent. Limitations: Only the targeted CYP2C19 variants will be detected. Variants in other genes will not be detected. Diagnostic errors can occur due to rare sequence variations. Variant detection is not a substitute for therapeutic drug monitoring or other clinical monitoring.** **Days Performed: Monday, Thursday** **Reported: 8-16** Days CPT: 81225x1	10/30/2014

Test Changes (cont.)

Test Name	Order Code	Billing Code	Change	Effective Date
Cyto P450 2D6 Geno	2D6	87628	**Specimen Requirements: 3.0 mL Whole blood - EDTA (Lavender - 1.0 mL minimum);** Refrigerated. **Alternate - 3.0 mL Whole blood ACD A or B (Yellow - 1.0 mL minimum);** Refrigerated. **Special Info: May aid in dose planning for tamoxifen and other drugs metabolized by CYP2D6.** **Component(s): CYP2D6 Variant 1, CYP2D6 Variant 2, CYP2D6 Variant 3, CYP2D6 Variant 4, 2D6 Predicted Phenotype.** **Clinical Info: Background Information for Cytochrome P450 2D6 (CYP2D6) 14 Variants and Gene Duplication: Characteristics: Impaired drug metabolism causing adverse drug reactions or lack of drug response. Drugs metabolized by CYP2D6 include antiestrogens (tamoxifen), alpha-blockers, analgesics, anticonvulsives, antidepressants, antidiabetics, antihypertensives, antipsychotics, antitussives, beta blockers, cardioactives, norepinephrine reuptake inhibitors, and stimulants. Additionally, many drugs inhibit CYP2D6 activity, and may affect drug response. Inheritance: Autosomal recessive. Cause: CYP2D6 gene variants. Negative: No mutations detected is predictive of *1 functional alleles. Variants Tested: (Variants are numbered according to M33388 sequence.) Functional: *2 (2850C>T), *2A (-1584C>G; 2850C>T). Decreased function: *9 (2613-5delAGA), *10 (100C>T), *17 (1023C>T), *29 (1659G>A) *41 (2988G>A). Non-functional: *3 (2549delA), *4 (1846G>A), *5 (gene deletion),*6 (1707delT), *7 (2935A>C), *8 (1758G>T), *12 (124G>A), *14 (1758G>A). Increased function: Duplicated functional alleles. Incidence of Poor Metabolizer Phenotype: 10 percent of Caucasians and Hispanics, 2 percent of African Americans, and 1 percent of Asians. Penetrance: Drug dependent. Clinical Sensitivity: Greater than 95 percent of clinically significant CYP2D6 variants are detected in Caucasians; sensitivity is unknown in other ethnicities.** **Methodology: Multiplex polymerase chain reaction and detection primer extension. Analytical Sensitivity and Specificity: Greater than 99 percent for the variants tested. Limitations: Only the targeted CYP2D6 variants will be detected. Variants in other genes will not be detected. Diagnostic errors can occur due to rare sequence variations. Variant detection is not a substitute for therapeutic drug monitoring or other clinical monitoring.** **Days Performed: Monday, Thursday** **Reported: 8-16** Days CPT: 81226x1 Price: $828.00	10/30/2014
Fentanyl and Metabolite, Urine	UFENT	82344	**Specimen Requirements: 10.0 mL Random urine in a clean container (2.5 mL minimum)** **Components:** Fentanyl, Norfentanyl, **Creatinine, pH, Specific Gravity, Oxidants.** **Reference Ranges:** Fentanyl, Urine **<6 ng/mL** Norfentanyl, Urine **<6 ng/mL** **Creatinine, Urine: >19 mg/dL** **Urine pH: 4-10** **Urine Specific Gravity: 1.005 – 1.020** **Oxidants, Urine: Negative** **Methodology:** Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS) **Days Performed: 4** days per week **Reported: 2-5** Days	10/20/2014
Flow Cytometry for Myeloma	FCMYEL	82848	**Special Info:** Includes: CD45- CD38+ cells; CD45- CD38+ Kappa+ cells; CD45- CD38+ Lambda+ cells; CD45- CD38+ CD19+ cells;CD45- CD138+ cells; **CD45- CD138+ Kappa+ cells; CD45- CD138+ Lambda+ cells; CD45- CD138+ CD19+ cells; CD56.** Submit tissue specimen or fine needle aspirate with Surgical Pathology requisition. **CPT:** 88187x1, 88185**x6**, 88184x1	10/2/2014
Hemoglobinopathy Evaluation	HBHPLC	84444	**Special Info:** Indicate age of patient, and/or ethnic background and date of most recent blood transfusion. If an abnormal hemoglobin or abnormal distribution of hemoglobins is found, additional hemoglobin studies will be performed and charged separately. These tests include alkaline and acid electrophoresis, sickle solubility, globin chain electrophoresis, Hb H stain, unstable hemoglobin and **ferritin**.	10/2/2014

Test Changes (cont.)

Test Name	Order Code	Billing Code	Change	Effective Date
HLA-B27	HLAB27	77024	**Specimen Requirements:** Draw specimens Monday through Thursday only. **DO NOT draw on Fridays, weekends, or holidays.**	10/1/2014
IDH1 and IDH2 Mutation Analysis, Exon 4	IDH12	88044	**Specimen Requirements: 5.0 mL Whole blood - EDTA (Lavender - 1.0 mL minimum); Refrigerated.** **3.0 mL Bone marrow - EDTA (Lavender - 1.0 mL minimum); Refrigerated.** **4** Unstained 5-micron thick slides **(3 slides minimum)**; Ambient. 1 Formalin-fixed paraffin Block; **Refrigerated. FFPE tumor tissue Formalin fix (10 percent neutral buffered formalin) and paraffin embedded tissue.** **Extracted DNA - EDTA (Lavender). 20 uL extraced DNA at a concentration of 50 ng/uL is required.** **Methodology: Polymerase Chain Reaction/Sequencing** **Reported: 13-16** Days **Stability:** Ambient - **24** Hours. **FFPE tumor tissue: Indefinitely.** Refrigered - **5** Days. **FFPE tumor tissue: Indefinitely.** Frozen - **Unacceptable.**	11/20/2014
IgG Subclasses	IG1234	82141	**Reference Range:** IgG Subclass 1: 18-99 Years: **398-965 mg/dL** IgG Subclass 2: 18-99 Years: **176-698 mg/dL** IgG Subclass 3: 18-99 Years: **16-134 mg/dL** IgG Subclass 4: 18-99 Years: **5-131 mg/dL** **Days Performed:** Monday-**Friday**	10/21/2014
IgG Subclasses	IGG4	80607	**Reference Range:** 18-99 Years: **5-131 mg/dL** **Days Performed: Monday-Friday**	10/21/2014
IgG Subclasses	IGGSUB	75776	**Reference Range:** IgG Subclass 1: 18-99 Years: **398-965 mg/dL** IgG Subclass 2: 18-99 Years: **176-698 mg/dL** IgG Subclass 3: 18-99 Years: **16-134 mg/dL** IgG Subclass 4: 18-99 Years: **5-131 mg/dL** **Days Performed:** Monday-**Friday**	10/21/2014
Inhibin B	INHIBB	82819	**Reported: 1-7** Days	11/20/2014
Inner Ear 68KD Ab	AB68KD	81984	**Stability:** Ambient: 4 Days **Refrigerated: 7** Days. **Frozen: Store frozen at -20°C if not tested within 7 days. May be stored at -20°C for up to one year. Ship frozen.**	10/31/2014
Luekocyte Alkaline Phosphatase Stain	LAPSTN	85632	**Specimen Requirements:** **Alternate: 5.0 mL Whole blood - sodium or lithium heparin (Green).** **Do not draw in a plasma separator tube. Do not collect after 15:00 or on weekends.**	9/10/2014
Mucin	SFMUCN	77606	**Test Name: Mucin Clot Time, Synovial Fluid**	7/24/2014
Neurofibromatosis Type 1, Comprehensive	NFIB1	88611	**CPT:** 81407x1, 81408x1, 88230x1	11/1/2014
Neutrophil Cytoplasmic Antibody	ANCA	76168	**Component names:** P-ANCA (MPO) - **Myeloperoxidase Ab** C-ANCA (PR3) - **Proteinase-3 Ab**	9/30/2014

Test Changes (cont.)

Test Name	Order Code	Billing Code	Change	Effective Date
Ova and Parasite Exam	OVAP	75319	**Special Info:** A minimum of three specimens collected over 3 - 10 days are recommended. Stool should not be contaminated with water or urine. When appropriate, please note the parasite suspected and note the areas to which the patient has traveled on the order. Requests for Ova and Parasite Exam on patients who have been hospitalized for >3 days are not recommended. Parasites are rarely recovered. Stool specimens obtained with a warm saline enema or Fleets phospho-soda are acceptable. Administration of barium, bismuth, metamucil, castor oil, mineral oil, tetracycline therapy or administration of antiamoebic drugs within 1 week prior to testing may interfere with results. In Urine specimens for the diagnosis of schistosomiasis or Filariasis, 24 hr. urine collections are recommended. Random urine collections are acceptable. Random urines >24 hrs. old or 24 hr. urine collections >48 hrs. old will be rejected. Preserved specimens will be rejected. For the diagnosis of Schistosomiasis infection, there is a circadian rhythm in Schistosoma egg excretion with peak excretion occurring around noon. Collection of a midday urine specimen or a 24 hr. collection in a container without preservatives is recommended. Peak excretion occurs between noon and 3 p.m. In patients with hematuria, eggs may be found trapped in the blood and mucus in the terminal portion (last voided portion) of the urine specimen. For the diagnosis of Trichomonas infection, molecular methods are preferred. Recommended order codes are UTRICM (males) and VAGAMD (females). **Trichomonas antigen testing is also available for vaginal specimens only (order code TRICHO).** **Reported: 1-8** Days	10/9/2014
Ova and Parasite Screen	OVAPSC	89803	**Special Info: The Ova and Parasite Screen is a screening test for Giardia lamblia and Cryptosporidium species only. This test replaces the traditional Ova and Parasite Exam. Ideally, fresh stool should be collected and immediately placed into the O-P transport kits which contain 10% formalin as a preservative. Preserved stool should be transported at ambient temperature. Unpreserved stool should not be submitted unless it can be delivered to the laboratory within a few hours in a clean leakproof container. Unpreserved stool should be transported at either ambient or refrigerator temperature but never frozen. Other transport media such as Cary-Blair, MIF or C & S diluted samples may interfere with confirmatory test methods. Interfering substances include barium, bismuth, metamucil, castor oil, mineral oil, or antiamoebic drugs within one week prior to specimen collection. O-P transport kits with collection instructions can be obtained from Client Services or the Outpatient Laboratories.** Alias: **Cryptosporidium Antigen, Giardia Antigen** **Reported: 1-6** Days	10/9/2014
Plasminogen Activator Inhibitor	PAI	26303	**Primary name:** "Plasminogen Activator Inhibitor, **Activity**"	10/30/2014
PRO-PredictR TPMT	PPTMPT	81267	**Components: Test build may need to be modified.**	9/30/2014
Proteinase 3 Autoantibodies (C-ANCA)	ANCAC	82580	**Test Name: Proteinase 3 Autoantibodies** **Component name:** C-ANCA (PR3) - **Proteinase 3 Ab**	9/30/2014
Routine Body Fluid Analysis	ROUBFL	31	**Components: Specific gravity removed from panel (new order code)**	10/2/2014
Synovial Fluid, Routine Analysis	ROUSYN	30	**Components: Specific gravity and Mucin removed from panel (new order code)**	10/2/2014
Vitamin A	VITA	84590	**Reference Range:** Units **(mg/L)** 0-1 month: **0.18-0.50 mg/L** 2-144 months: **0.20-0.50 mg/L** 13-17 years: **0.26-0.70 mg/L** 18-99 years: **0.30-1.20 mg/L**	9/23/2014
Vitamin D2/D3, Serum	D2D3	83283	**Specimen Requirments:** 1.0 mL Plasma - EDTA (Lavender); Refrigerated. **Special Info:** Test not recommended for patients < 1 year old. Results may be falsely increased due to interfering substance present in patients less than 1 year old.	11/3/2014

Test Changes (cont.)

Test Name	Order Code	Billing Code	Change	Effective Date
Wafarin Sensitivity Genotype	WARSEN	88301	**Specimen Requirements: 3.0 mL Whole blood - EDTA (Lavender - 1.0 mL minimum);** Refrigerated. **Alternate - 3.0 mL Whole blood ACD A or B (Yellow - 1.0 mL minimum);** Refrigerated. **Special Info: Aids in warfarin dosage planning in conjunction with VKORC1 testing.** **Components(s): CYP2C9 Variant 1, CYP2C9 Predicted Phenotype, CYP2C9 Variant 2** **Methodology: Polymerase chain reaction (PCR), DNA Probe Hybridization, and Electrochemical Detection.** **Clinical Info: Background Information for Cytochrome P450 2C9 (CYP2C9) 2 Variants: Characteristics: Some CYP2C9 mutations cause impaired drug metabolism, a major cause of adverse drug reactions or lack of drug response. For example, CYP2C9 variants are associated with slowed clearance and lower dose requirements for warfarin. Inheritance: Autosomal recessive. Cause:CYP2C9 gene variants. Negative: No variants detected is predictive of *1 functional alleles and normal enzymatic activity. Variants Tested: (Variants are numbered according to NM_000771 transcript) Decreased function: *2 (c.430C>T). Non-functional: *3 (c.1075A>C). Allele Frequencies: CYP2C9 *2: Caucasians 0.08-0.13, Asians 0.02-0.06, African Americans less than 0.01. CYP2C9 *3: Caucasians 0.06-0.10, Asians less than 0.01, African Americans 0.01-0.04. Clinical Sensitivity: Greater than 90 percent of clinically significant CYP2C9 variants are detected in Caucasians; sensitivity is unknown in other ethnicities. Analytical Sensitivity and Specificity: 99 percent. Limitations: Only the targeted CYP2C9 variants will be detected. Variants in other genes will not be detected. Diagnostic errors can occur due to rare sequence variations. Variant detection is not a substitute for therapeutic drug monitoring or other clinical monitoring.** **Days Performed: Monday, Thursday** **Reported: 6-9** Days **CPT:** 81227x1, 81355x1	10/30/2014

New Tests

Test Name	Order Code	Billing Code	Test Information	Effective Date
5-Hydroxyindoleacetic Acid, Urine 24 Hour	UHIAAD	82950	**Specimen Requirement:** 1.0 mL Urine, 24 hour collect (well mixed) in a clean container; Refrigerated. **Methodology:** High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) **Reference Range:** 0.0-8.0 mg/24 hrs **Days Performed:** 2 days per week **Reported:** 1-9 Days	10/6/2014
5-Hydroxyindoleacetic Acid, Urine Random	UHIAR2	80049	**Specimen Requirement:** 1.0 mL Urine, random, clean container (No preservatives - 0.3 mL minimum). Refrigerated. **Methodology:** High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) **Reference Range:** Age: 2-10 years; < 12 mg/g CRT 10-99 years; 0-10 mg/g CRT **Days Performed:** 2 days per week **Reported:** 1-9 Days	10/6/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
Alpha-1-Antitrypsin Serum Level and SERPINA1 Targeted Genotyping	A1APG	90332	**Specimen Requirement:** 1.0 mL Serum - SST or red (Gold - 0.5 mL minimum); Refrigerated. Alternate - 5.0 mL Whole blood - EDTA (Lavender - 3.0 mL minimum); Refrigerated. **Special Info:** AAT performed in Immunopathology. A1ADNA performed in Molecular Pathology. **Methodology:** Real-Time PCR, Nephelometry (NEPH) **Days Performed:** Thursday **Reported:** 7-10 Days **CPT:** 82103x1, G0452x1, 81332x1 **Price:** $200.00	11/11/2014
Barbiturates Confirmation, Urine	UBARBC	90310	**Specimen Requirement:** 5.0 mL Random urine in a clean container (3.0 mL minimum); Refrigerated. For confirmation purposes only. **Special Info:** This test can only be added to a drug screen which has been performed and confirmation is indicated. Follow chain of custody procedure when appropriate. **Methodology:** Gas Chromatography Mass Spectrometry (GCMS) **Clinical Info:** To confirm screen. **Days Performed:** Sunday-Saturday **Reported:** 1-4 Days **CPT:** 80102x1 **Price:** $95.00	11/13/2014
Body Fluid Culture and Stain	BFCUL	90174	**Specimen Requirement:** 5.0 mL Bodyfluid in a clean, leakproof container; Ambient. Transfer 5.0 mL (2.0 mL - minimum) aspirate to a sterile tube or container OR body fluid collected in blood culture bottles, accompanied by orginal specimen, if available. **Methodology:** Culture, Identification, Gram Stain **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87070x1, 87205x1 - Additional billing is applied for identification and susceptibility testing. CPT codes vary based on methodology **Price:** $69.00	10/1/2014
Bronchoscopy Culture and Stain	BALCSM	90204	**Specimen Requirement:** Bronchial washing(s), Bronchoscopy specimen(s) in a clean, leakproof container; Refrigerated. **Methodology:** Gram Stain, Culture, Identification **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87205x1, 87071x1 **Price:** $69.00	10/1/2014
C9orf72 Expansion Assay	C9ORF	90325	**Specimen Requirement:** 5.0 mL Whole blood - EDTA (Lavender - 2.0 mL minimum); Ambient. 5.0 mL Whole blood - ACD A or B (Yellow - 2.0 mL minimum); Ambient. Extracted DNA - EDTA (Lavender); Ambient. 15 ug extracted DNA at a concentration of 20 ug/mL is required. **Methodology:** Repeat-Primed PCR and Fluorescent Fragment-Length Assay **Clinical Info:** The function of C9orf72 is unknown at this time. Nonetheless, nuclear RNA foci were detected in affected tissues of patients with expanded GGGGCC repeats, suggesting defective RNA processing (Rademakers et al. Nat Rev Neurol 8(8):423-434, 2012). The repeat-primed PCR test is used as a screening method for the presence or absence of a pathogenic GGGGCC hexanucleotide repeat expansion located in the first intron of C9orf72. Of note, this test is not designed to determine the number of GGGGCC repeats in alleles carrying the pathogenic expansion (Warner et al., 1996; Renton, 2011). **Days Performed:** Upon Receipt **Reported:** 17 Days **CPT:** 81479x1 **Price:** $250.00	12/11/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
Catheter Tip Culture	CTCUL	90175	**Specimen Requirement:** One catheter, clean container; Ambient. Aseptically remove catheter and clip 5 cm of distal tip directly into a sterile container. **Methodology:** Culture, Identification **Days Performed:** Sunday-Saturday **Reported:** 21 Days **CPT:** 87070x1 **Price:** $46.00	10/1/2014
Clobazam	CLOBAZ	90152	**Specimen Requirement:** 1.0 mL Plasma sodium-heparin (Green - 0.5 mL minimum); Refrigerated. Plasma gel tube is not acceptable. Alternate - 1.0 mL Serum from red top (0.5 mL minimum); Refrigerated. Plasma gel tube is not acceptable. **Methodology:** Liquid Chromatography/Tandem Mass Spectometry (LC/MS/MS) **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 80154 **Price:** $112.00	10/23/2014
Cystic Fibrosis Respiratory Culture	CFRCUL	90282	**Specimen Requirement:** Unspecified sputum in a sterile container; Refrigerated, expectorated, or induced. Unspecified throat swab, culturette; Refrigerated. **Methodology:** Culture, Identification **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87070x1 **Price:** $46.00	10/28/2014
Ear Culture	EARC	90216	**Specimen requirement:** Unspecified swab(s) (0.1 mL - minimum); Ambient. Drainage on a swab in either Amies or Stuart's bacterial transport medium. Unspecified aspirate(s) in a sterile container (0.1 mL - minimum); Ambient. **Methodology:** Culture, Identification **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87070x1 **Price:** $46.00	10/2/2014
Ear Culture and Stain	EARCSM	90183	**Specimen Requirement:** Unspecified swab(s) (0.1 mL - minimum); Ambient. Drainage on a swab in either Amies or Stuart's bacterial transport medium. Unspecified aspirate(s) (0.1 mL - minimum); Ambient. Place in a sterile container with saline. **Methodology:** Gram Stain, Culture, Identification **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87205x1, 87070x1 **Price:** $69.00	10/1/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
Eye Culture	EYEC	90200	**Specimen Requirement:** Place drainage into a sterile container; Ambient. Place fluid into a sterile container with saline; Ambient. Place scrapings in a sterile container; Ambient. Place scraping directly on culture media plates. Media is available through the microbiology laboratory for direct inocuation, particularly for corneal scrapings. **Special Info:** Media and incubation conditions are employed for the recovery of aerobic bacteria. For conjunctival specimens, sample each eye with separate swabs (pre-moistened with sterile saline) by rolling over conjunctiva. When only one eye is infected, sampling both can help distinguish indigenous microflora from true pathogens. For corneal scrapings, scrape ulcers and lesions with sterile spatula and inoculate scraping directly onto media. Prepare smears by rubbing material onto 1-2 cm area of slide. For vitreous fluid, prepare eye for needle aspiration of fluid and transfer fluid to sterile tube. **Methodology:** Culture, Identification **Clinical Info:** Conjunctivitis is usually caused by bacteria or viruses associated with upper respiratory tract infections. Organisms comprising skin and mucous membrane flora (eg, coagulase negative staphylococci, diphtheroids, viridans group streptococci) are generally considered non-pathogenic when recovered from the conjunctival mucosa, but pathogenic if recovered from the surface or interior of the eye (especially in patients who have had cataract or LASIK surgery). Corneal infections (eg, keratitis) are usually associated with ocular trauma, complications of cataract surgery, or improper care/use of contact lens. Endophthalmitis, diagnosed by aspiration of vitreous or aqueous fluid or biopsy, may result from exogenous introduction of pathogens into the eye during trauma or post-surgery, as well as endogenous spread from the bloodstream. Anaerobic cultures require a separate order. **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87070x1 **Price:** $46.00	10/1/2014
Eye Culture and Stain	EYECSM	90203	**Specimen Requirement:** Unspecified scrapings in a sterile container; Ambient. Place scrapings directly on culture media plates. Media is available through the microbiology laboratory for direct inoculation, particularly for corneal scrapings. Unspecified body fluid in a sterile container; Ambient. Unspecified drainage in a sterile container; Ambient. **Special Info:** Media and incubation conditions are employed for the recovery of aerobic bacteria. For conjunctival specimens, sample each eye with separate swabs (premoistened with sterile saline) by rolling over conjunctiva. When only one eye is infected, sampling both can help distinguish indigenous microflora from true pathogens. For corneal scrapings, scrape ulcers and lesions with sterile spatula and inoculate scraping directly onto media. Prepare smears by rubbing material onto 1-2 cm area of slide. For vitreous fluid, prepare eye for needle aspiration of fluid and transfer fluid to sterile tube. **Methodology:** Culture, Identification, Gram Stain **Clinical Info:** Conjunctivitis is usually caused by bacteria or viruses associated with upper respiratory tract infections. Organisms comprising skin and mucous membrane flora (eg, coagulase negative staphylococci, diphtheroids, viridans group streptococci) are generally considered non-pathogenic when recovered from the conjunctival mucosa, but pathogenic if recovered from the surface or interior of the eye (especially in patients who have had cataract or LASIK surgery). Corneal infections (eg, keratitis) are usually associated with ocular trauma, complications of cataract surgery, or improper care/use of contact lens. Endophthalmitis, diagnosed by aspiration of vitreous or aqueous fluid or biopsy, may result from exogenous introduction of pathogens into the eye during trauma or post-surgery, as well as endogenous spread from the bloodstream. Anaerobic cultures require a separate order. **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87205x1, 87070x1 **Price:** $69.00	10/1/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
Fibrosprect II	FS2	90206	**Specimen Requirement:** 2.0 mL serum - SST (GOLD - 1.0 mL minimum) or 2.0 mL serum - red top tube (1.0 mL minimum); Refrigerated **Methodology:** Nephelometry (NEPH) , Enzyme-Linked Immunosorbent Assay (ELISA) **Days Performed:** Monday-Friday **Reported:** 4-7 Days **CPT:** 83520x2, 83883x1 **Price:** $288.00	10/23/2014
FISH for Angiosarcoma MYC Amplification	MYCAMP	90214	**Specimen Requirement:** 6 Slides, unstained; Ambient. Cut six 4 um thin sections from formalin-fixed, paraffin-embedded tissue ONLY, and apply to silanized or positively charged slides. Allow to air dry. The first section and the last section are to be processed for H&E Stains Alternate - 1 block, formalin-fixed paraffin. Formalin-fixed, paraffin-embedded tissue ONLY. The tissue blocks may be handled routinely; no special storage or handling requirements are required. **Special Info:** Proper selection of tissue for analysis is the responsibility of the pathologist. If there is not enough or no tumor present on the H&E stained slide, a new specimen block or slide is required. **Methodology:** Fluorescent In-Situ Hybridization (FISH) **Days Performed:** 3 days per week **CPT:** 88368x1 **Price:** $918.00	9/15/2014
Histoplasma Antigen by EIA, Body Fluid	HISTBF	90324	**Specimen Requirement:** 2.0 mL Cerebrospinal fluid (CSF) in a sterile container (0.8 mL minimum); Refrigerated. 2.0 mL Bronchoalveolar lavage (BAL) sterile container (0.5 mL minimum); Refrigerated. 2.0 mL Body fluid in a sterile container (0.5 mL minimum); Refrigerated. 2.0 mL Plasma EDTA (lavender - 1.2 mL minimum) or sodium citrate (light blue - 1.2 mL minimum); Refrigerated. **Special Info:** Sodium hydroxide is an interferring substance. **Methodology:** Enzyme Immunoassay (EIA) **Clinical Info:** The MVista® histoplasma quantitative antigen test aids the diagnosis of histoplasmosis. Monitoring the histoplasmosis helps determine when treatment can be stopped and to diagnose relapse **Days Performed:** Monday-Friday **Reported:** 3-5 Days **CPT:** 87385x1 **Price:** $165.00	12/4/2014
Histoplasma Antigen by EIA, Serum	HISTOS	90323	**Specimen Requirement:** 2.0 mL Serum - no additive SST (Gold - 1.0 mL minimum); Refrigerated. **Methodology:** Enzyme Immunoassay (EIA) **Days Performed:** Sunday-Saturday **Reported:** 2-3 Days **CPT:** 87385x1 **Price:** $100.00	12/4/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
HIV-1 RNA, Qual TMA	HIVTMA	90207	**Specimen Requirement:** 1.6 mL Plasma - EDTA (Lavender - 0.6 mL minimum); Frozen. Alternate - 1.6 mL Plasma - EDTA PPT (white); Frozen. 1.6 mL Plasma ACD A (Yellow); Frozen. 1.6 mL Plasma - sodium citrate (Lt. Blue); Frozen. **Special Info:** Separate plasma from the cells by centrifugation within 24 hours after collection. Transfer the plasma or serum to a plastic screw-cap vial. **Clinical Info:** The APTIMA® HIV-1 RNA, Qualitative assay may be used: 1. As an aid in the diagnosis of acute and primary HIV-1 infection. 2. To confirm HIV-1 infection in persons who repeatedly test positive for HIV-1 infection. 3. To resolve indeterminate or inconclusive HIV-1 Western blot results. **Days Performed:** Monday, Wednesday, Friday **Reported:** 3-7 Days **CPT:** 87535x1 **Price:** $290.00	10/16/2014
HIV-2 Antibody Confirmation, Serum	HIV2CN	90312	**Specimen Requirement:** 0.5 mL Serum - no additive SST (Gold - 0.2 mL minimum); Frozen. **Methodology:** Line Immunoassay (INNO-LIA) **Clinical Info:** Confirmation of the presence of HIV-2 antibodies in patients with repeatedly reactive combined HIV-1 and HIV-2 antibody or HIV-2 antibody-only screening test results diagnosis of HIV-2 infection **Days Performed:** Monday **Reported:** 7-12 Days **CPT:** 86689x1 **Price:** $57.80	11/20/2014
MRSA/Staph Aureus Culture Screen	SANSAL	90201	**Specimen Requirement:** Place swab(s) in a sterile container; Ambient. Specify site. Swabs must be placed in either Amies or Stuart's bacterial transport medium. **Methodology:** Culture **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87081x1 **Price:** $35.00	10/1/2014
OVA1	OVA1	90148	**Specimen Requirement:** 2.2 mL Serum (1.1 mL minimum); Refrigerated. **Methodology:** Electrochemiluminescence (ECLIA), Fixed Rate Time Nephelometry **Days Performed:** Monday-Saturday **Reported:** 2 Days **CPT:** 84999x1 **Price:** $650.00	10/2/2014
Reducing Substances, Urine	URED	90303	**Specimen Requirement:** 10.0 mL Random urine in a clean container (5.0 mL minimum); Refrigerated. **Methodology:** Chemical **Days Performed:** Sunday-Saturday **Reported:** 8 Hours **CPT:** 81005x1 **Price:** $30.00	10/16/2014
Sinus Culture and Stain	SINUSC	90202	**Specimen Requirement:** 1.0 mL Aspirate(s) in a sterile container - Sinus aspirate; Ambient. **Methodology:** Culture, Identification, Gram Stain **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87205x1, 87070x1 **Price:** $69.00	10/1/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
Tramadol and Metabolite, Quant	TRAQNT	90289	**Specimen Requirement:** 10.0 mL Random urine in a clean container - no preservatives (2.5 mL minimum); Refrigerated. **Methodology:** Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS) **Days Performed:** 4 days a week **Reported:** 2-5 Days **CPT:** 82542x1 **Price:** $77.00	10/27/2014
VMA, Urine 24 Hr	UVMA24	90307	**Specimen Requirement:** 1.0 mL Urine, 24- hour (well-mixed) in a clean, leak proof, container (no preservatives - 0.3 mL minimum); Refrigerated. **Methodology:** High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) **Reference Range:** 15-99 years: 0.0-8.0 mg/d **Days Performed:** 2 days per week **Reported:** 1-9 Days	10/6/2014
VMA, Urine Random	UVMAR	90305	**Specimen Requirement:** 1.0 mL Urine, random in a clean, leak proof, container (no preservatives - 0.3 mL minimum); Refrigerated. **Methodology:** High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) **Reference Range:** 0-11 months: 0.0-27.0 mg/g CRT 12-23 months: 0.0-18.0 mg/g CRT 2-4 years: 0.0-13.0 mg/g CRT 5-9 years: 0.0-8.5 mg/g CRT 10-14 years: 0.0-7.0 mg/g CRT 15-99 years: 0.0-6.0 mg/g CRT **Days Performed:** 2 days per week **Reported:** 1-9 Days	10/6/2014
Voltage Gated Potessium Channel Ab	VGKCAB	90284	**Specimen Requirement:** 4.0 mL Serum - no additive SST (Gold - 0.5 mL minimum); Refrigerated. Separate serum from cells within 1 hour. Alternate - 4.0 mL Serum - no additive (Red - 0.5 mL minimum); Refrigerated. Separate serum from cells within 1 hour. **Special Info:** Screening test for voltage-gated potassium channel (VGKC) antibody receptor complex-associated autoantibodies. Assay does not identify Contactin Associated Protein 2 (CASPR2) Antibody or Leucine-rich Glioma Inactivated 1 Protein (LGI1) antibodies individually. **Methodology:** Quantitative Radioimmunoassay **Clinical Info:** Voltage-Gated Potassium Channel (VGKC) antibodies are associated with neuromuscular weakness as found in neuromyotonia (also known as Issacs' syndrome) and Morvan syndrome. VGKC antibodies are also associated with paraneoplastic neurological syndromes and limbic encephalitis; however, VGKC antibody-associated limbic encephalitis may be associated with antibodies to leucine-rich, glioma-inactivated 1 protein (Lgi1) or contactin-associated protein-2 (Caspr-2) instead of potassium channel antigens.The clinical significance of this test can only be determined in conjunction with the patient's clinical history and related laboratory testing. **Days Performed:** Tuesday **Reported:** 2-10 Days **CPT:** 83519x1 **Price:** $230.00	10/23/2014

New Tests (cont.)

Test Name	Order Code	Billing Code	Test Information	Effective Date
Wound Culture and Stain	WCUL	90176	**Specimen Requirement:** Place in a sterile container; Ambient. Purulent material should be transferred to a sterile container or anaerobe trasnport vial if an anaerobe culture is required. Swab(s) in Amies media; Ambient. Routine culture swabs should be submitted in a transport system with Stuart's or Amies medium. Aspirate(s) in a sterile container; Ambient. **Special Info:** Media and incubation conditions are employed for the recovery of aerobic bacteria from an abscess, lesion or wound. Aspirates of purulent material are superior to swab specimens. Prior to specimen collection, remove surface exudate by cleansing with sterile saline or 70% alcohol and then aspirate with needle and syringe. Transfer aspirate fluid to a sterile container (or Port-A-Cul™ vial if anaerobic culture is also ordered). If a swab specimen must be used, a flocked swab (e.g., Eswab™) is preferred because it collects more material than standard swabs. **Methodology:** Culture, Identification, Stain **Clinical Info:** Provision of specific information regarding the specimen site is essential for culture interpretation. Submission of superficial wound specimens is not valuable because the culture usually yields commensal flora which is difficult to distinguish from underlying bacteria responsible for the infection. Traumatic, post-surgical, and diabetic foot infections are often polymicrobial requiring an additional anaerobic culture order to recover all bacterial pathogens. The optimal specimen to diagnose skin and soft tissue infections is a biopsy sample (see tissue culture). **Days Performed:** Sunday-Saturday **Reported:** 7 Days **CPT:** 87205x1, 87070x1 **Price:** $69.00	10/1/2014

Fee Increases

Test Name	Order Code	Billing Code	List Fee	CPT Codes	Effective Date
Cryptococcus Ag Detection	CAD	75306	$48.00	86403x1	1/2/2015
T Cell V-Beta Flow Cytometry	TVBETA	82594	$747.00	88184x1 88189x26 88185x1	10/1/2014

Fee Reductions

Test Name	Order Code	Billing Code	List Fee	CPT Codes	Effective Date
Cyto P450 2C19 Genotype	2C19PL	88307	$325.00	81225x1	10/30/2014
Routine Body Fluid Analysis	ROUBFL	31	$74.00	89051x1 84157x1	10/2/2014

Discontinued Tests

Test Name	Order Code	Billing Code	Test Information	Effective Date
5-Hydroxyindoleacetic Acid, Urine	U5HIAA	89593	Test discontinued. Replaced by UHIAAD or UHIAR2.	10/6/2014
Diagnostics CFTR Intron 8	CFTR	80937	Test discontinued. Lab use only.	11/11/2014
Histoplasma Capsulatum Antigen	SHISTO	83008	Test discontinued. Replaced by HISTOS and HISTBF.	12/4/2014
HIV-2 IgG Abs, Confirmation	HIV2WB	78717	Test discontinued.	9/18/2014
Immunoglobins, Fluid	FIG	78204	Test discontinued.	9/30/2014
Immunoglobins, Urine	UIG	79142	Test discontinued.	9/30/2014
Legionella Antibodies	LEGAB	75514	Test discontinued.	9/30/2014
Monoclonal Protein, Fluid	FMPA	77079	Test discontinued.	9/30/2014
Protein Electrophoresis, Fluid	FPE	78209	Test discontinued.	9/30/2014
Respiratory Synctial Virus Abs IgG and IgM	RSVGM	79802	Test discontinued.	8/4/2014
Tramadol and Metabolite, Quant	TRACON	82606	Test discontinued. Replaced by TRAQNT.	10/27/2014
Tramadol Screen	TRAMSC	82605	Test discontinued. Replaced by TRAQNT.	10/27/2014
VMA, Urine	UVMA3	80050	Test discontinued. Replaced by UVMA24 or UVMAR.	10/6/2014